

# Rock Products and BUILDING MATERIALS

INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XV.

CHICAGO, ILL., APRIL, 22, 1915.

Number 12

## CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydratine's" waterproofing material. "Universal," "Acme" and "Electrod" Brands Ready Roofing. Get our prices.

Charleston, S. C. Birmingham, Ala. Atlanta, Ga. New Orleans, La.



Phoenix Portland Cement  
Manufactured by  
PHOENIX PORTLAND CEMENT CO.

NAZARETH PA.  
Sole Selling Agent, WILLIAM G. HARTRANFT CEMENT CO.  
Real Estate Trust Building, PHILADELPHIA, PENNSYLVANIA.

## NOW READY DIRECTORY FOR 1915

Cement, Gypsum and Lime Manufacturers

NEATLY BOUND VEST POCKET SIZE

\$1.00 Postpaid

FRANCIS PUBLISHING COMPANY  
537 So. Dearborn St., CHICAGO

**FIRE BRICK** "MOUNT SAVAGE." None Better  
"REFRACTO" thoroughly dependable for  
boiler work and general purposes.  
**F LUE LININGS of FIRE CLAY**  
**F IRE PROOFING** THERMIC FIRE CLAY  
HOLLOW TILE for both par-  
tition and outside use.

**Union Mining Company**

GENERAL OFFICES  
1113-1117 Fidelity Building, BALTIMORE, MD.  
Manufacturing Plants: Mount Savage, Md.

## DO YOU SELL?



"Strongest Keene  
Cement Known"

A Better  
Plastering Material

WRITE FOR BOOKLET AND PRICES

**AMERICAN KEENE CEMENT COMPANY**  
Sigurd, Utah

## SPECIAL FEATURES OF THIS NUMBER

|  |         |
|--|---------|
| Put Your Hand to the Plow                      | Page 22 |
| Congress Provides for Much Concrete            | " 33    |
| Cleveland's New Filtration Plant               | " 34    |
| Brazilian Market for Cement                    | " 37    |
| A Modern Hydrated Lime Plant                   | " 40    |
| The Pitting of Lime Plaster                    | " 42    |
| Quarrying Operations of Canadian Gypsum Plants | " 46    |



**Giant** BELT for Your Drives  
**Granite** BELT for Your Elevators  
**Supremo** BELT for Your Conveyors

WHY? ASK US.

**Revere Rubber Co.**

BOSTON NEW YORK CHICAGO NEW ORLEANS PHILADELPHIA

## THE CONCRETE HOUSE AND ITS CONSTRUCTION

SAFETY AND PERMANENCE



DO NOT BE AFRAID CONCRETE CAN NOT BURN

We have some excellent pamphlets for Free distribution informing you how to best construct of "Concrete for Permanence," also a handsomely illustrated 224 page book,

**The Concrete House,**  
Price \$1.00

**VULCANITE** PORTLAND CEMENT CO.  
Philadelphia - New York



Daily Capacity  
7000 Barrels



The Quality  
Cement of the  
Middle West

MORE THAN FIFTEEN YEARS OF SATISFACTION

THREE PLANTS: ALPENA - DETROIT - WYANDOTTE

## HURON AND WYANDOTTE

Water and Rail Facilities Best Serve the  
Entire Middle West

EVERY BARREL TESTED AND GUARANTEED. SOLD BY THE BEST DEALERS EVERYWHERE

Main Office: 1525 Ford Bldg., Detroit, Michigan

Daily Capacity  
3000 Barrels



The Leading  
Concrete  
Cement



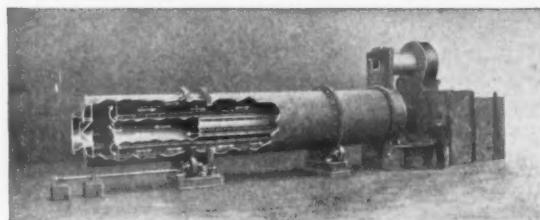
## "PENNSYLVANIA"

**Hammer Crushers** For Crushing and Pulverizing Lime, Limestone, Gypsum, Marl, Shale, Etc. Main Frame of Steel, "Ball and Socket" self aligning Bearings; forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running. No other hammer Crusher has such a big Safety Factor.

**Pennsylvania Crusher Co.**  
New York PHILADELPHIA Pittsburgh

BACON & FARREL  
ORE & ROCK  
CRUSHING - WORLD KNOWN  
**ROLLS-CRUSHERS**  
EARL C. BACON, ENGINEER  
HAYEMEYER BUILDING, NEW YORK

## SPECIALISTS IN THE DRYING FIELD FOR THE LAST 16 YEARS



Section showing direction gases pass thru the dryer

## RUGGLES-COLES "DOUBLE SHELL" DRYERS

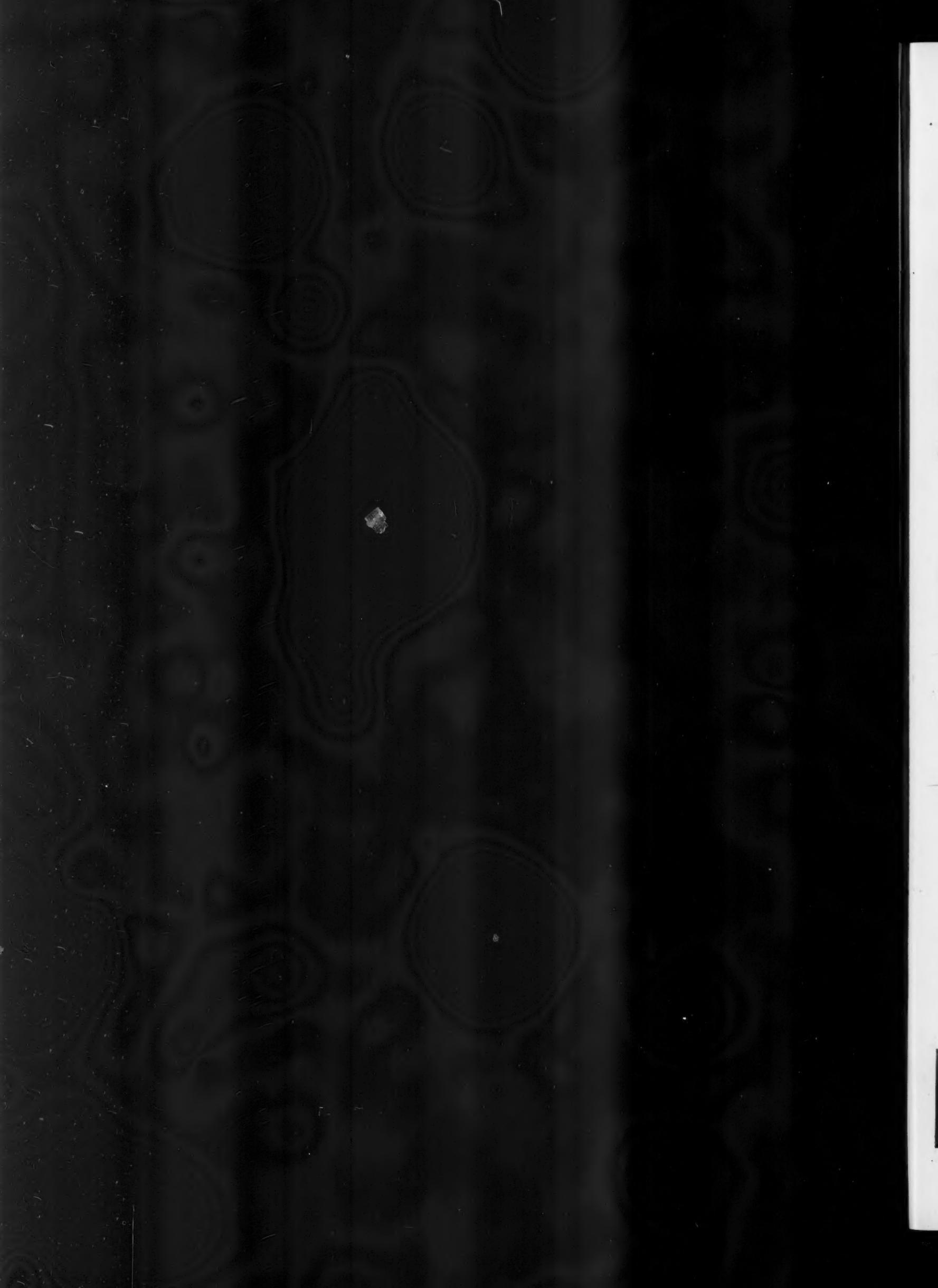
are used in all parts of the world, there being more than 400 installations. Over half a hundred are used for drying sand and gypsum at plaster, brick and cement plants.

We build six regular types of dryers, but for special work we build machines to order.

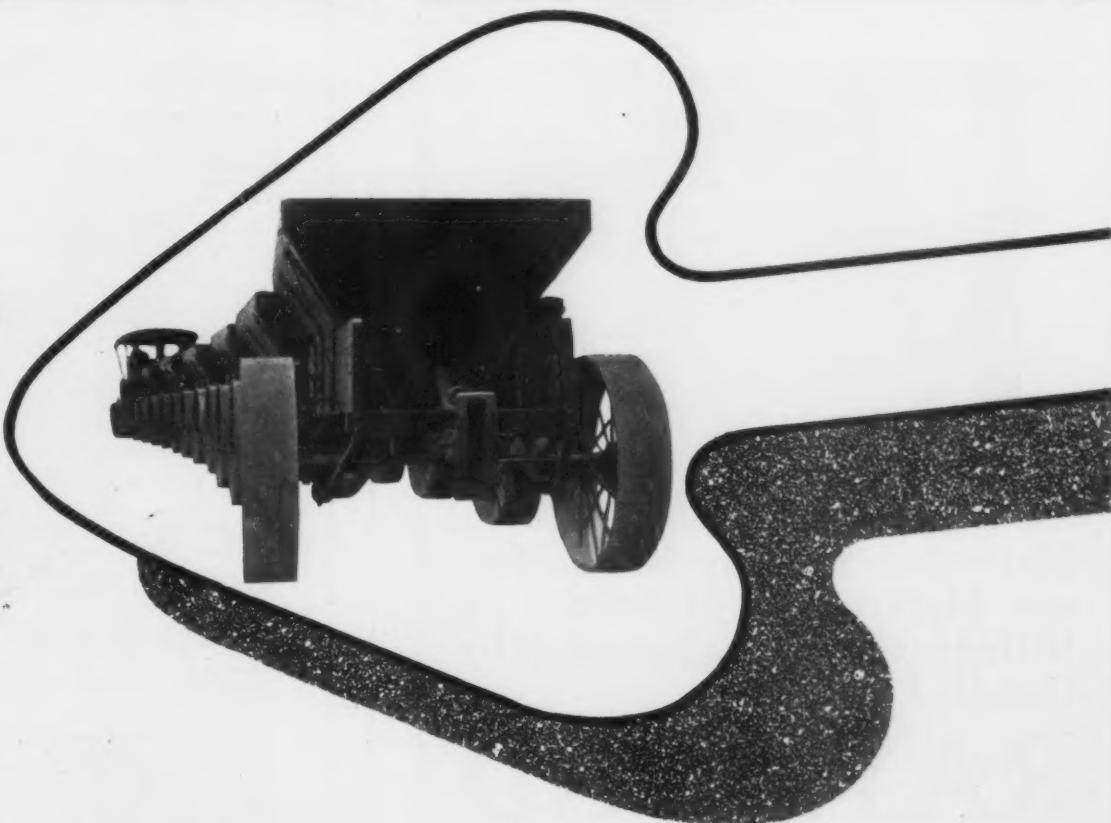
Book "What We Dry" will interest you.

**Ruggles-Coles Engineering Co.**  
CHICAGO OFFICE  
McCormick Building  
50 Church Street  
NEW YORK





# What is a TROY Reversible and Why?



## It Is:

A hauling wagon with a capacity of 10,000 pounds;  
 Built by practical engineers for the use of contractors;  
 Made to pull in trains behind gas or steam tractors;  
 Made in dump, spreader, log and flat bed types, to haul anything from  
 brick to telegraph poles or crushed stone;  
 Fitted with positive steering mechanism at each end, which enables it  
 to track accurately with the engine, to follow around any curve or through  
 any passage, or to be backed either in a straight line or around a corner.

## It Is This—Because:

It is just the kind of equipment the modern contractor must have;  
 It reduces hauling costs;  
 Eliminates team troubles;  
 Gets the work done quicker;  
 Never strikes nor asks for more pay;  
 Works 24 hours a day when necessary;  
 Goes anywhere a team can go;  
 Increases the profit on a contract;  
 And pays for itself quicker than any other type of contractors' equipment you  
 can buy.

## Your Case—

May be one where Troy Reversibles are most needed—to finish the work on time  
 and get to the new contract—to make more money, to save more expense.

*Write for Booklet No. 3 R-P, and more information—now.*

## The Troy Wagon Works Company

TROY, MIAMI COUNTY, OHIO

NEW YORK  
50 Church St.

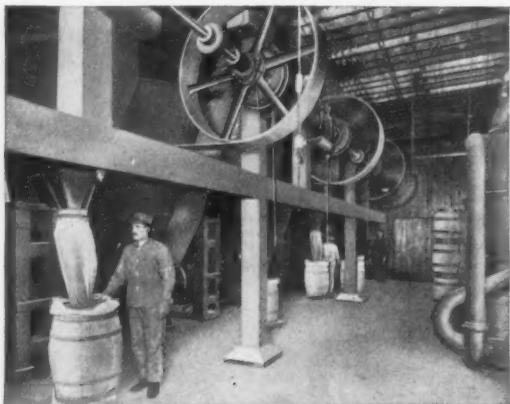
DETROIT  
319 Hammond Bldg.

PHILADELPHIA  
702 Abbott Bldg.

CHICAGO  
900 Lytton Bldg.      LONDON, ENG.  
49 Pall Mall

# troy Reversibles

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



The Raymond System in a big paint factory. Green, red, yellow and other dry colors are ground in this room without dust and with no discomfort or danger to workmen.

**More than Seventy-five Different Materials in Hundreds of Different Factories Successfully Handled by the**

# RAYMOND PULVERIZING AIR-SEPARATING SYSTEM

Many of our best customers today are concerns who, previous to *experience* with the Raymond System, were inclined to assume that it could not be successfully applied for *their* material or *their* operating conditions.

*If you grind or separate any material* you will find it worth while to get our catalogue, which shows the tremendous variety of materials in the reduction and handling of which the Raymond System has proven enormously economical and otherwise advantageous.

In many industries the Raymond System has absolutely revolutionized operating methods by proving its ability to grind material more finely at less expense, to separate impurities in the product, to insure a uniform material, and to transform grinding-rooms from dust-laden poisonous infernos to cleanly work-rooms.

All Raymond installations are rigidly guaranteed to perform what we promise.

Would it not be wise to find out what we may be able to do for *you*?

We design special machinery and methods for Pulverizing, Grinding, Separating and Conveying all powdered products. We manufacture Automatic Pulverizers, Roller Mills, Vacuum Air Separators, Crushers, Special Exhaust Fans and Dust Collectors.

*Cut out this Coupon  
as a Reminder to Write*

**RAYMOND BROS.  
IMPACT PULVERIZER CO.**

1301 North Branch St., CHICAGO  
about the Raymond System  
of Grinding and Separating.

## Loading 1 Yard of Sand Per Minute



Loading 1 yard of Sand per minute at the yards of the D. J. Kennedy Co., Pittsburgh, Pa.

The cost of loading building materials is one of the largest items on your expense sheet. Many dealers are loading their sand, gravel, crushed stone, coal, etc., at the rate of 1 to 1½ cubic yards per minute with a

## Jeffrey Wagon and Truck Loader

This loader also possesses the features of traveling from pile to pile under its own power and requiring only one man to handle it.

Send for your copy of Bulletin No. 165-35. It gives many valuable hints of what others are doing with Jeffrey Loaders.

**The Jeffrey Mfg. Co.**  
935 North Fourth Street, Columbus, Ohio

## Clinchfield Portland Cement Corporation

*General Office and Mills:*

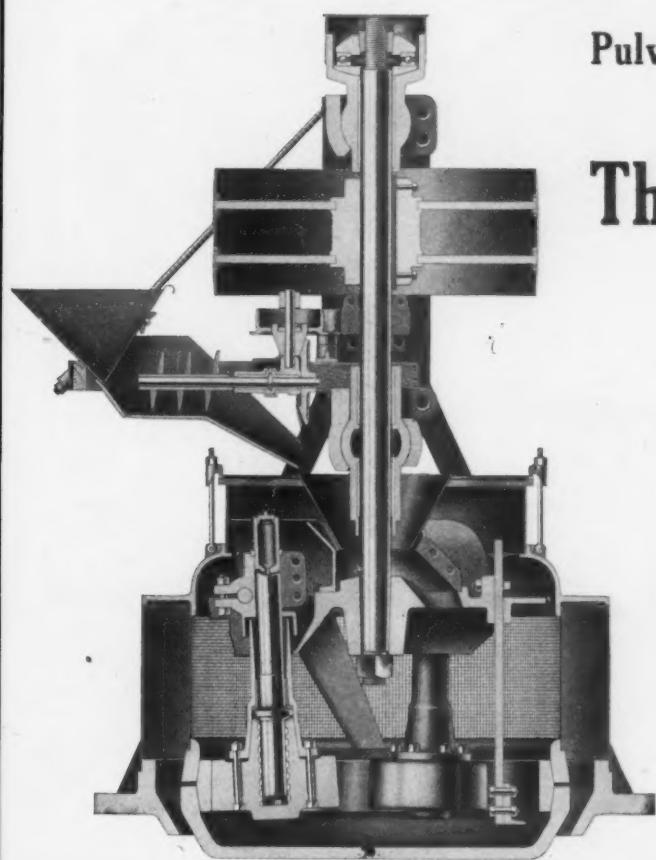
**Kingsport, Tenn.**

*Sales Offices:*

**KINGSPORT, TENN.**

1305 Union Trust Bldg.  
CINCINNATI, OHIO

908 Commercial Bank Bldg.  
CHARLOTTE, N. C.



**Pulverized Limestone for Agricultural Purposes  
is Economically Produced by**

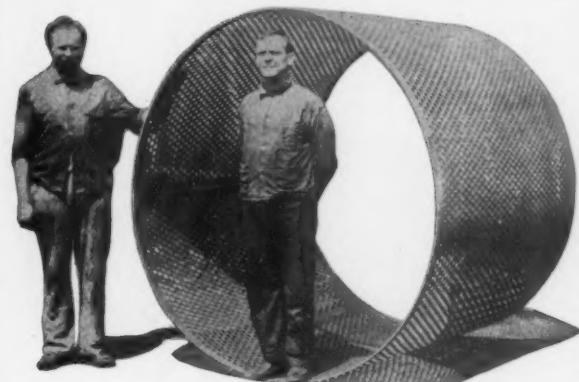
## **The Bradley Three Roll Mill**

It pulverizes raw limestone without drying at the rate of from 5 to 7 tons per hour to the fineness recommended by all agricultural experiment stations, and at such an exceptionally low maintenance cost that no other type of mill should be considered. It is not necessary to screen the material after it leaves the mill, as it cannot leave until it is of proper fineness. This should be considered carefully as it simplifies the installation and reduces cost of maintenance. **Why not investigate.**

*MANY MILLS IN SUCCESSFUL OPERATION*

Send for Catalog 42 and List of Installations

**Bradley Pulverizer Co.,** Boston  
Massachusetts



**Conical Screen Shells  
A Specialty—  
for  
Gravel Washing Plants**

**Screen Sections  
AND  
Dust Jackets  
FOR  
Revolving Screens**

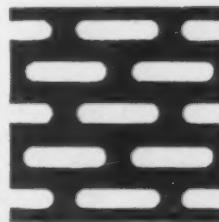
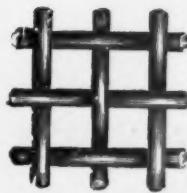
Made accurately to size to fit all makes and sizes of screens.

**Flat Screen Plates—Everything  
In Screens For Crushed  
Stone, Gravel, Sand, Clay, Etc,**

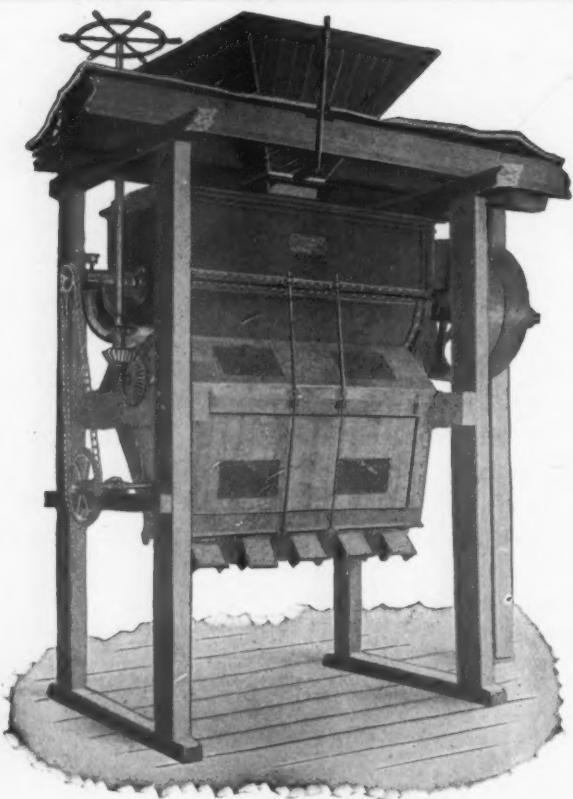
### **QUICK SHIPMENTS**

OUR ENTIRE ATTENTION IS DEVOTED TO THIS WORK. PRICES RIGHT.

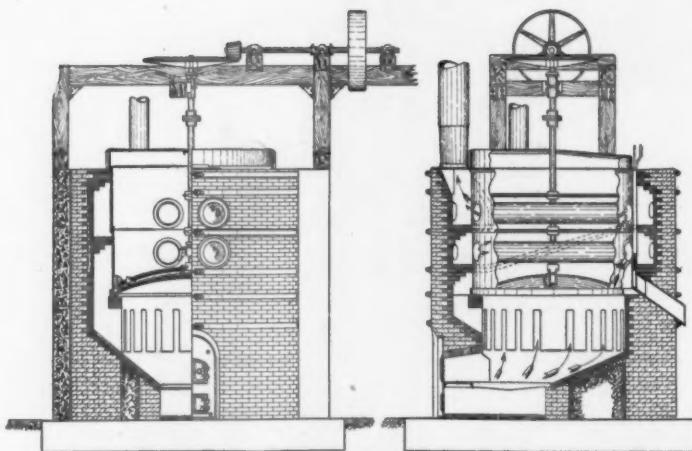
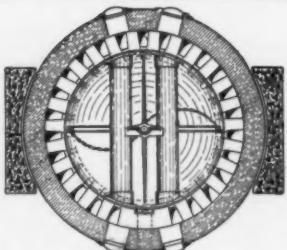
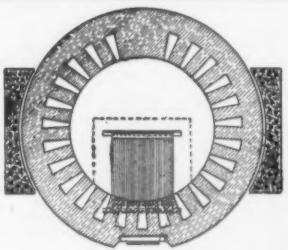
Sole manufacturers of the O'Laughlin Revolving Screen.  
The best screen made for crushed stone.



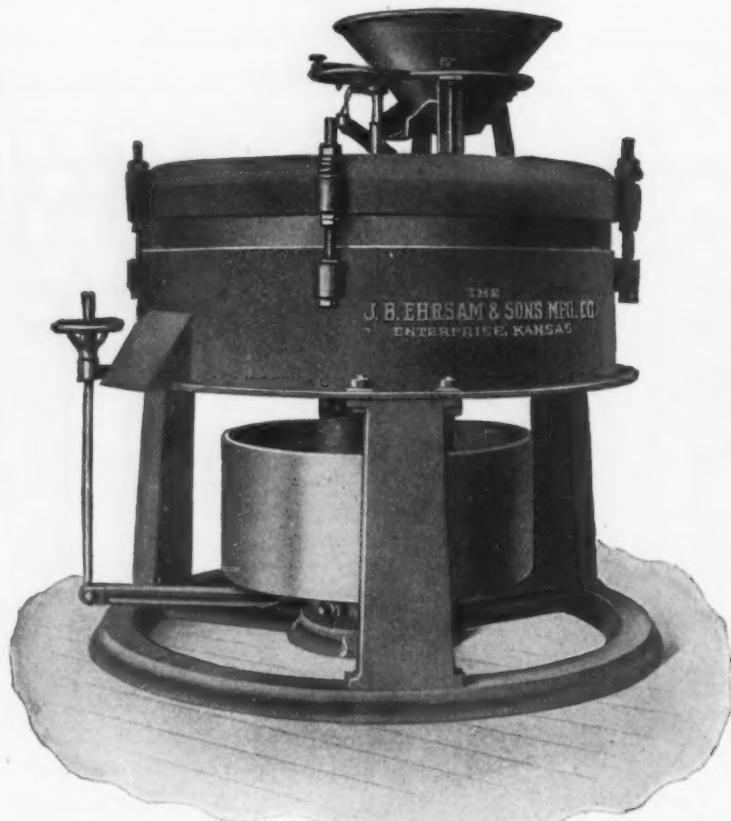
**JOHNSTON & CHAPMAN CO.**  
2929 Carroll Avenue . . . . . CHICAGO



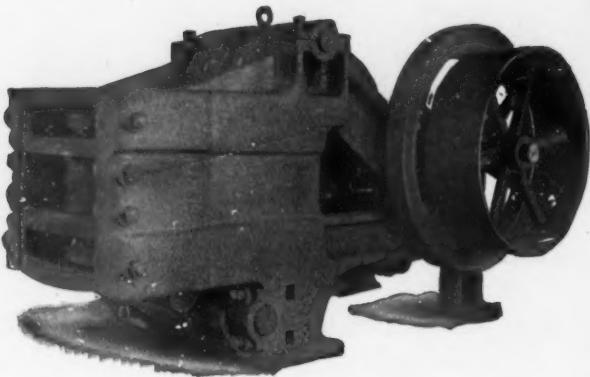
Enterprise Noiseless Mixer



Ehksam Calcining Kettles—Built in 5 sizes—6-8-10-12-14 feet in diameter, having capacity of from 3 tons to 20 tons to the charge



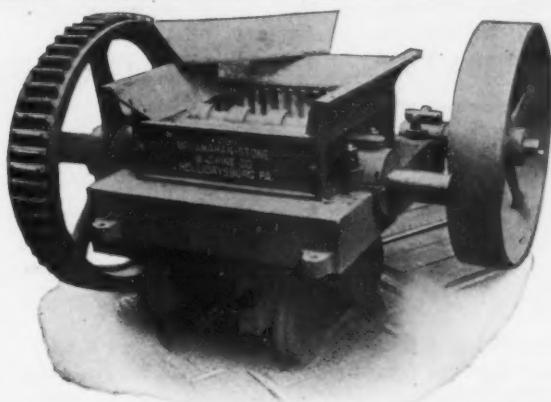
Horizontal and Vertical Heavy Duty Grinding Mills



Jaw Crushers Built in all sizes up to 24" x 34" jaw opening. Rotary Fine Crushers in sizes up to 42" inside diameter.

**The J. B. Ehksam & Sons Mfg. Co., ENTERPRISE, KANSAS**  
 Manufacturers of Plaster Mill Machinery, Conveying, Elevating and Power Transmission Appliances

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



### OUR SINGLE ROLL CRUSHER IS AS SIMPLE AS CAN BE

Is easily fed, makes less fines than either a Gyratory or Jaw. Capacity 5 to 500 tons per hour. For crushing Limestone, Dolomite, Hard Rock Phosphate, Cinders, Etc. Screens of all descriptions. Washers for dirty stone.

Ask for Information

**MCCLANAHAN-STONE MACHINE CO., Hollidaysburg, Pa.**



### High Grade Cars For Quarry Use

of our manufacture are in operation in many successful quarries. Why not install such equipment in your quarry?

THE KILBOURNE & JACOBS MFG. CO.  
Columbus, Ohio



### Feed and Discharge OF SYMONS DISC CRUSHERS

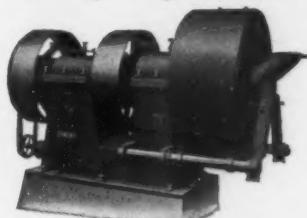
The material fed through the center is spread quickly and uniformly by centrifugal force and is thrown out the instant it is reduced to the proper size. This feature eliminates

Unnecessary wear of the discs—Waste of power—Clogging and packing at the discharge

#### AND RESULTS IN

Uniform wear of the discs. No grooves. Ready discharge and greater capacity. Lower horsepower per ton crushed. The reasons why make us say

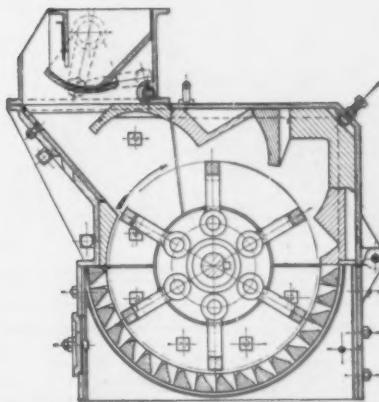
#### Eventually Symons Discs



MANUFACTURED AND SOLD ONLY BY

**CHALMERS & WILLIAMS**  
New York Office  
Equitable Building  
1450 Arnold St., Chicago Heights, Ill.

# Pulverators



Cross Section of Allis-Chalmers Pulverator (Patented)

# Pulverizing by a New Principle

Note that Involute Curve  
The Direction of Rotation

Advise us your requirements concerning capacity and fineness wanted

Forward Sample of Your Material

Complete Rock Crushing Plants and Cement Mills—  
Power Plants—Electric Motors

# Allis-Chalmers Manufacturing Company

OFFICES IN ALL PRINCIPAL CITIES

WISCONSIN.

MILWAUKEE,  
For All Canadian Business Refer to Canadian Allis-Chalmers, Ltd., Toronto, Ont.  
FOREIGN REPRESENTATIVES:—Frank R. Perrot, 883 Hay St., Perth, W. A.  
Frank R. Perrot, 204 Clarence St., Sydney, N. S. W. Mark R. Lamb,  
Huernanos 1157, Casilla 2653, Santiago, Chile. H. I. Keen, 732 Salisbury  
House, London Wall, E. C., London, England. American Trading Co., Repre-  
sentative in Japan, South America, China and Philippine Islands. Herbert  
Ainsworth, Johannesburg, So. Africa.



For underground masonry, cisterns, reservoirs, pits, coal and grain pockets.

Watertight, sanitary, hard and dustless floors.

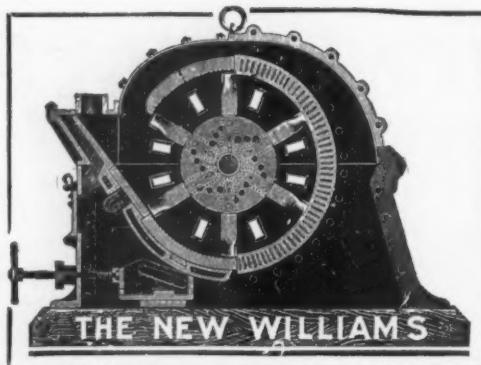
Used with sand and cement to produce a waterproof mortar which will bond perfectly to new or old masonry and permanently waterproof, even if plastered on the inside of a cellar, where the water pressure is outside.

Hercules Colored Coatings; Plaster-bond and Damp-proofing Mastic.

# “HERCULES” WATERPROOFING

**HERCULES WATERPROOF CEMENT CO.**  
BUFFALO, NEW YORK

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



THE NEW WILLIAMS

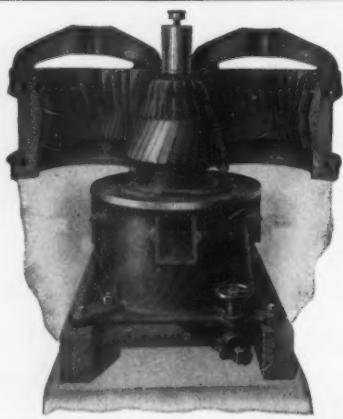
Without Screening or Separating  
**THE WILLIAMS UNIVERSAL FINE GRINDER**  
 on dry limestone will produce a product  
**95%—30 Mesh—60%—100 Mesh**

The Williams New Universal Fine Grinder is the only machine having a really *adjustable* grinding plate. This adjustable plate insures uniformity of product at all times, minimizes repairs, and lengthens the life of hammers fully 50%, allowing from  $2\frac{1}{2}$ " to 4" more wear of the hammers than would otherwise be possible.

Detail description and illustrations of this machine will be found in our Catalog No. 4, which will be sent to all interested parties on request. Investigate this machine NOW—it will be worth your while. A statement from you as to nature of material to be handled, original size, size product desired, and quantity per hour will enable us to make proper recommendations.

**The Williams Patent Crusher & Pulverizer Co.**

Works: St. Louis, Mo. General Sales Dept.—Old Colony Bldg., Chicago, Ill. San Francisco: 268 Market St.



**STURTEVANT MACHINERY**

**CRUSHERS**

Thirty Years of Practical Experience has taught us that no one machine is adapted to all purposes. Customers expect correctly designed machines for their special work. Our large line enables one to select properly. It consists of:

**CRUSHERS**—For coarse, medium and fine work on hard or soft rock. Jaw, Rotary and Hammer design.

**CRUSHING ROLLS**—Coarse, medium and fine. Hard or soft rock,—wet or dry.

**TRI-ROLL MILLS**—For medium crushing, giving Two Roll Reductions.

**RING-ROLL MILLS**—For pulverizing hard materials.

**EMERY MILLS and HAMMER-BAR MILLS**—For pulverizing softer materials.

**SCREENS**—Inclined Vibrating and Rotary for fine or coarse work—wet or dry.

Sampling Crushers, Rolls, Grinders and Screens.

Send for Catalogue.

**STURTEVANT MILL CO., BOSTON, MASS.**

NEW YORK CHICAGO

DENVER PITTSBURGH

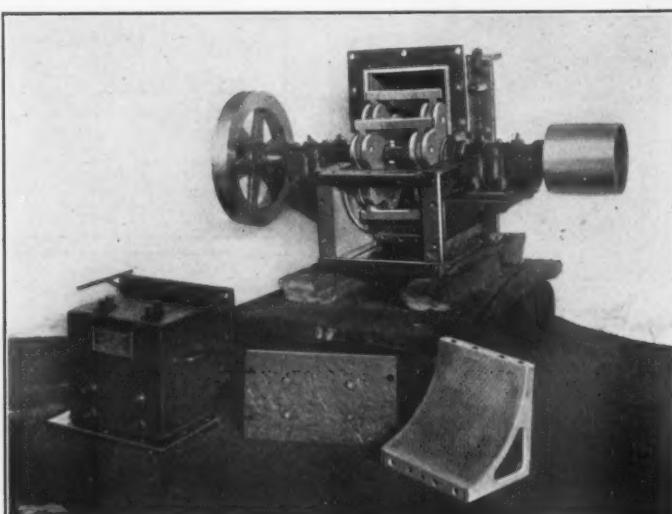
VICTORIA, B. C. LONDON, ENGL.

# THE K-B PULVERIZER

is the only machine combining these advantages:



- Steel Frame
- Alloy Steel Lining Plates
- Adjustable Manganese
- Steel Hammers
- Readily Removable Screens



Easily Accessible  
Parts

Gives Fine or Coarse  
Products

Simple Compact  
Large Capacity  
Low Power



**K-B Pulverizer Co., Inc.**

**MANUFACTURERS**

**86 WORTH STREET  
NEW YORK CITY**

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



## AUSTIN GYRATORY CRUSHERS

Made in Eight Sizes

50 to 5000 Tons Per Day

Plans and Specifications submitted and expert advice free on any problems involving rock-crushing or earth-handling.

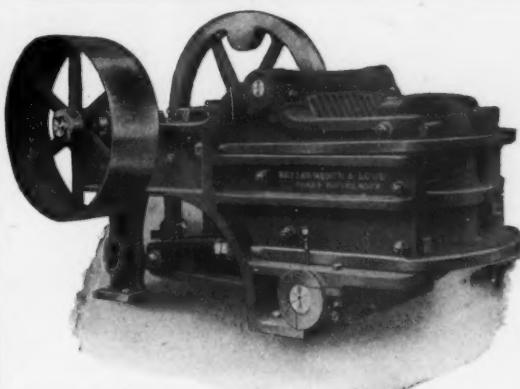
### AUSTIN MANUFACTURING CO.

New York Office: 30 CHURCH STREET

CHICAGO

Canadian Agents: MUSSENS, Ltd., Montreal

We manufacture:—Road and Elevating Graders, Scarifiers, Road Rollers, Quarry Cars, Dump Wagons, Stone Spreaders, Street Cleaning Machinery.



Nippers—17 x 19", 18 x 26", 20 x 30", 24 x 36" and 26 x 42"

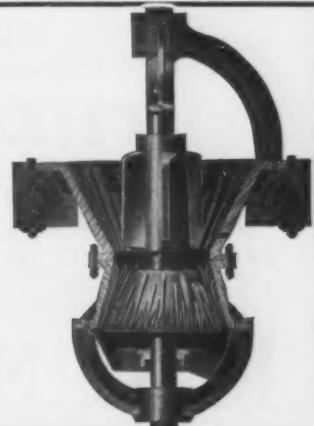
## Jaw and Rotary CRUSHERS

For all Rocks and Ores Softer than Granite

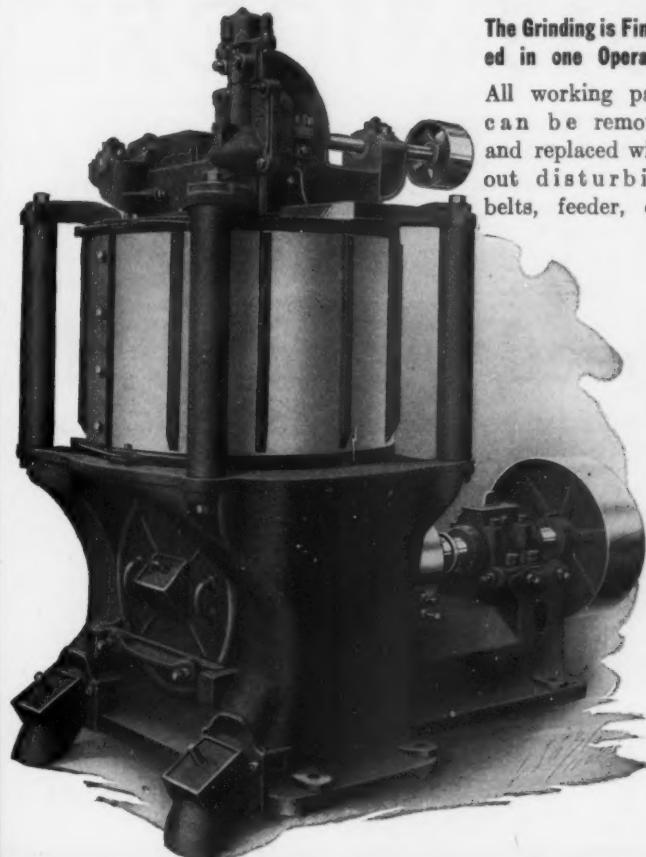
GYPSUM MACHINERY—We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhrs, Screens, Elevators, Shafting, etc.

Special Crusher-Grinders for Lime

**Butterworth & Lowe**  
17 Huron Street, Grand Rapids, Mich.



Crackers—6 sizes—many variations.



The Grinding is Finished in one Operation

All working parts can be removed and replaced without disturbing belts, feeder, etc.

## BONNOT PULVERIZER

Grinds and Screens Limestone, Raw Lime and Hydrated Lime

Does it at One Operation. Gives You Any Desired Fineness

GRINDING LIME IS LARGELY A SCREENING PROPOSITION. THE BONNOT PULVERIZER HAS THE LARGEST SCREENING SURFACE AND CONSEQUENTLY THE GREATEST CAPACITY.

NO OTHER MACHINE LIKE IT IN THE ACCESSIBILITY OF SCREEN AND GRINDING PARTS.

No. 4 Catalog Explains These Advantages

**THE BONNOT COMPANY**

909 N. Y. Life Bldg.  
KANSAS CITY, MO.

**CANTON, OHIO**



# MAXECON

## Means MAXimum of ECONomy

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY, Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

**WE DO NOT CLAIM ALL of the CREDIT  
for this achievement**

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.), Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co., Castalia P. C. Co., Pennsylvania P. C. Co., and many other patrons.

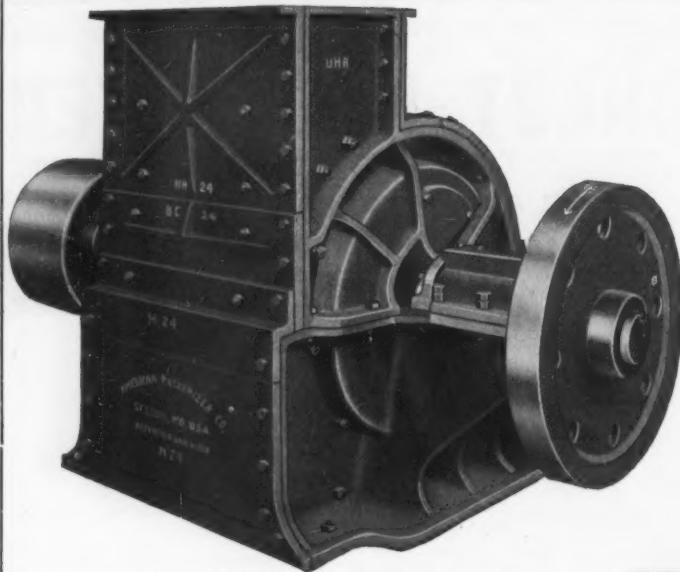
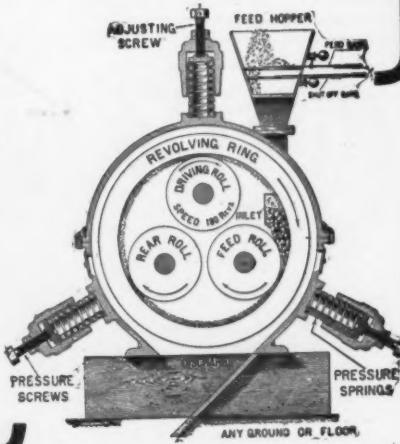
### THE RING WOBBLIES

The FREE WOBBLING POUNDING RING instantly and Automatically ADAPTS its position to the variations of work.

Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.

**KENT MILL CO.**

10 RAPELYEA ST., BOROUGH OF BROOKLYN, N. Y. CITY  
LONDON, W. C., 31 HIGH HOLBORN  
BERLIN-HOHENSCHOENHAUSEN



### 1915 MODEL

Steel Disks installed in offset — removed from grinding room.

Inner housing protected throughout with Manganese Steel and chilled iron liners.

Shafting, 5" diameter. Dust proof journals.

### Speed 600 R. P. M.

All crushing and grinding parts made of MANGANESE STEEL. Standard in efficiency—economical in operation.

### REWARD

Gentlemen:-

We have been using one of your No. 30 AMERICAN RING PULVERIZERS since December, 1913, and it is giving us the best of satisfaction. We have been able to put through the machine a much larger volume of material than you guaranteed—in fact, when weather conditions are favorable, we find we cannot feed the machine fast enough. We have had no repairs to make on the machine since installation.

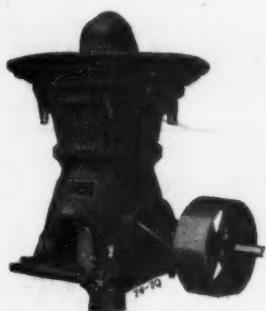
The machine is satisfactory in every way, inasmuch as the upkeep is practically nothing and the machine does much more than it was guaranteed to do.

Yours very truly,

NORTHERN LIME CO.

Install an AMERICAN and secure like results

**AMERICAN PULVERIZER COMPANY - East St. Louis, Illinois**



## McCully Gyratory Crusher

has perfect suspension for main shaft, removable countershaft bearing and steel gears.

Efficient oiling devices, great strength and simple construction give a perfect rolling motion that minimizes power consumption and possibility of breakage. Described and illustrated in Bulletin PM 4-58.

## Rock Crushers

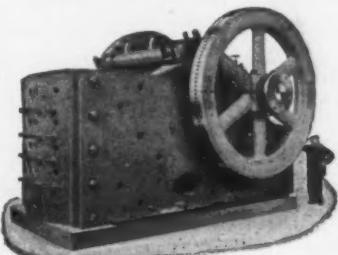
*The largest crusher in the world operating on trap rock is a*

### Superior Jaw Crusher

Installed March, 1910, in the quarry of the Birdboro Stone Co., Birdboro, Pa. It produces 3500 to 4000 tons per day.

Built in the following Receiving Opening Sizes: 36" x 24"; 42" x 40"; 60" x 48"; 84" x 60". Described in Bulletin PM 4-58.

*Write for Bulletin*



### Power & Mining Machinery Co. Works: Cudahy, Wis. New York Office: 115 Broadway

District Offices: Chicago, El Paso, San Francisco, Atlanta.

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Rock Crushing Machinery, Mining and Smelting Machinery, Cement Making Machinery, Wood Impregnating Plants, Loomis Pettibone Gas Generators, Suction Gas Producers, Cyanide and General Steel Tank Works, Woodbury Jigging System, Lead Burning.

M-277.2

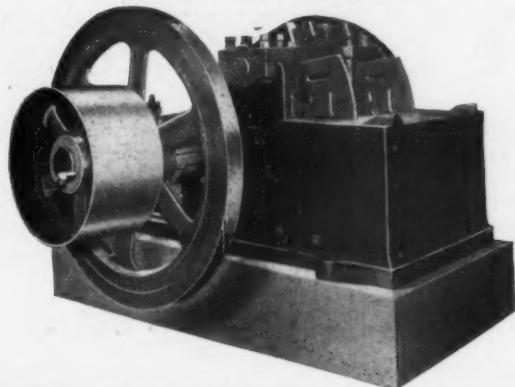
## TWENTY-FIVE YEARS of Crusher Experience

Having been centrally located in the heart of a large mining district for a period of 25 years, we have been enabled to keep in intimate touch with the operation and maintenance of our machinery. The machines we have given the most attention to, and make a specialty of, are our crushers and rolls.

Our rock crushing machinery is, therefore, the result of years of careful study and definite practical experience. Our engineering department is highly efficient in problems of the quarry.

We have an interesting booklet on the subject of Blake Crushers which should be in your file.

**Webb City and Carterville Foundry & Machine Works**  
Main Office, Webb City, Mo.



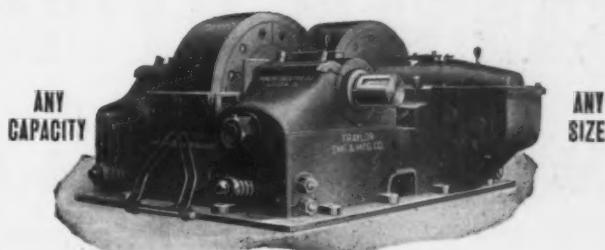
Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

**H**OISTING rope of every description for elevators, mines, coal hoists, ore hoists, conveyors, derricks and cranes, stump pullers, steam shovels, dredges, skidder rope for logging, ballast, unloading. Towing hawsers, mooring lines, tiller rope, and ship's rigging. Power transmission. Suspension bridge cables. Rope for all haulage purposes. Flattened strand rope. Non-spinning rope. Steel cable rope. Locked coil track cable for aerial tramways. Flat rope.

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## TRAYLOR "AA" TYPE CRUSHING ROLLS

**Enormous Tonnage in Crushing  
Quartz, Granite, Trap Rock, Cement Clinker and  
All Ores**

The TRAYLOR ROLLS are suitable for the hardest kind of service because they are designed to meet the exacting demands of high duty, efficiency and dependability.

Simple and strong in construction.  
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Absolute dust-proof bearings.  
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Many other superior features.

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Do it now*

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Lime, Cement, Plaster, Hair, Etc., Etc.

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Per Day

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WE MAKE IT  
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BULK and Barreled -::: "MASON'S HYDRATE"—For Brick-work, plastering and masonry. -::: "LIME FLOUR"—Hydrated Finishing Lime—Best on the market. -::: "CLOVER GROWER"—Land restorer, for the farmer—none better. -::: "CARBO HYDRATE"—Soil sweetener—crop producer. -::: Prompt shipments. -::: A dealer wanted in every town. -::: WRITE OR PHONE FOR PRICES.

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Delaware, Ohio

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is best for  
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Sold to Dealers only

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IT does not take a "master mind" to install a CLYDE Hydrating plant, nor does it take a "high priced" engineer to run one. If **YOU**, Mr. Lime Manufacturer, realized how simple it is to obtain a **PERFECT HYDRATE**, with the CLYDE HYDRATOR you would place your order with us by **FIRST MAIL**. Write us today—NOW, and let us explain to you what CLYDE PROCESS hydrated lime is and how to obtain the best results, then.

*Use your own judgment—it's up to you*

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The plastering in this fine manufacturing plant was all done with

### TIGER BRAND HYDRATED LIME

The scratch and brown coats were mixtures of "Tiger Brand," sand and hair. The walls were thus deadened to sound.

The white coat was "Tiger Brand" simply wet up with water. It produced a fine smooth white which will not pit or blister.

Big builders look for these advantages—that is why "Tiger Brand" makes your lime sales grow.

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Monarch publicity service is a new aid to you in selling and creating a call for Monarch Hydrated Lime. Be a Monarch Man. Write us today.

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were laid in

## Mitchell Hydrated Lime Mortar



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Sub-contractors for brick work.

**MITCHELL HYDRATED LIME** can be used for every purpose for which quick lime is used. It has many advantages as it is uniform and mixes better with sand to form a stronger bond.

It is estimated that it costs twenty cents per barrel to slack quick lime in a mortar box. This expense is saved by using hydrated lime. Merely mix the hydrate with sand and add water. Furthermore this mixing can be done indoors. Slacking boxes are eliminated.

Automatic mixers can be used to good advantage. The correct proportions of sand and hydrated lime can be mixed by the machine and no mortar men are needed on the job. It is necessary to employ men only for wheeling the mortar to the work. With a machine for mixing and hydrated lime, one contractor eliminated the labor of four men.

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If you are willing to be shown a saving, write us for particulars, proof and prices.

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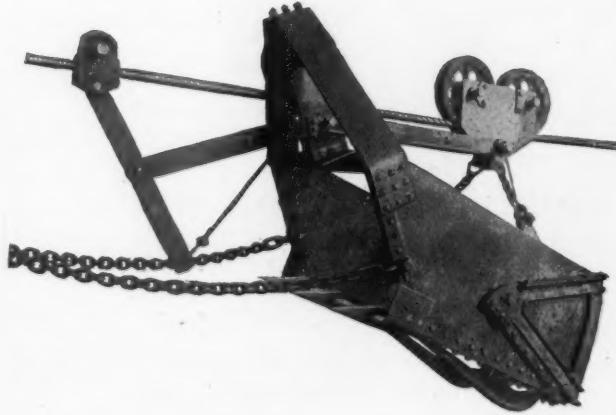
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**QUALITY, STRENGTH and DURABILITY**

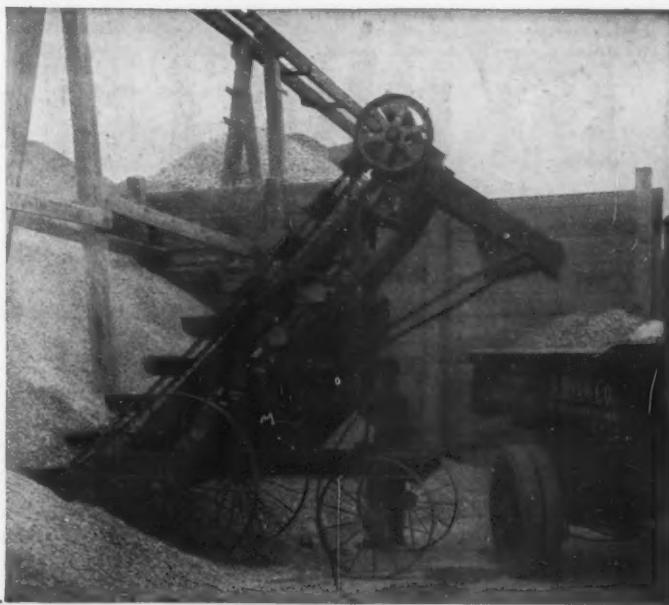
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**THIRTY YEARS**

Metallic Paint, Mortar Colors, Roof Cement, Etc. Prices and detailed information furnished on request.

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**The Hardest Job—The Easiest Way**

Digging into trap rock has always been slow work—a back breaking job, and very costly. Now note what a

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(Patented)

can do. It digs this material and delivers it into a truck at a speed of 1 cubic yard per minute for a cost of less than 1 cent per cubic yard for electric power. Of truck loading methods no choice is left after the efficiency of this loader has been witnessed. Write for cost data, and the details of this machine's powerful construction

**The Geo. Haiss Mfg. Co., Inc.**

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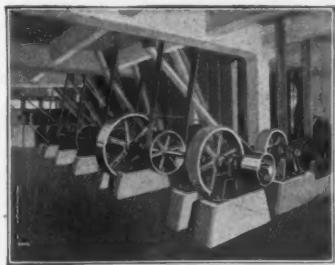
NEW YORK CITY

**Are You Getting Full Capacity From Your Plant?**

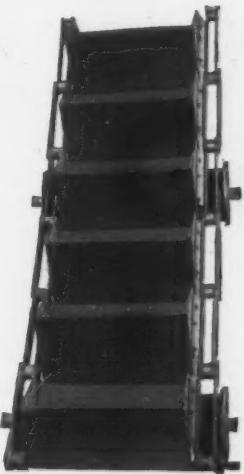
To get this, your elevating, conveying and screening system must be able to deliver the full capacity of your crushers every minute that you run.

If these parts of your equipment are continually falling down on the job or need a large amount of repairing to keep going, ***you are losing money.***If you want equipment that you can depend on ***twenty-four hours a day every day in the season, specify and insist on***

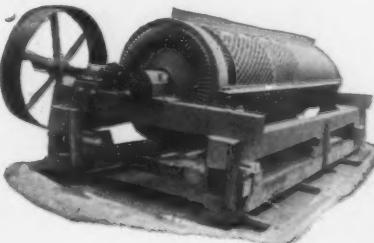
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Equipments  
of all kinds.

**WELLER-MADE**

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wide.



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Revolving  
Screens  
of every  
type for  
every  
purpose.

Special  
enclosed  
Screens for  
dusty or fine  
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**WELLER MFG. CO.**

Send for General Catalog P. 20

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# HYDRATED LIME

## Its Marvelous Increase In Consumption

### The Kritzer Service

Any lime can be successfully hydrated by our process; but whether your lime can be hydrated and successfully marketed is another question. We study your proposition and the possibilities of its commercial success, and advise you accordingly. Our ten years' experience in the business is a valuable assistance in this. Ours is not a mail order proposition. We investigate our customers' proposed plant thoroughly before we will enter into a contract with them. We turn down more prospects than we advise to go into the business. We can't afford to have any failures. Our customers' success is our success.

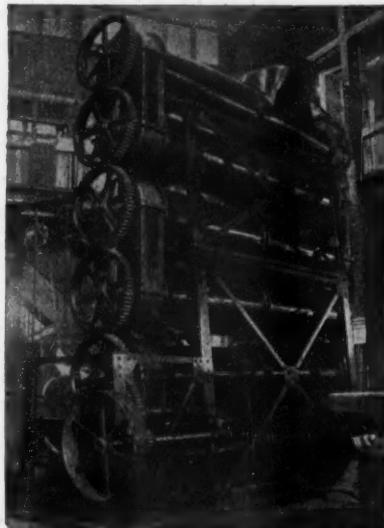
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### Are You Meeting the Increasing Demand for Hydrated Lime?

There is nothing forced or unnatural about the growing popularity of this product. It is a natural growth resulting from a widespread awakening to the advantages of Hydrated Lime for a variety of uses—as waterproofing for Concrete, in wall plaster, and in almost every case where lime is called for. In hydrated form it is weatherproof, more easily handled, and better adapted to modern methods, both of commerce and construction. A continued growth of the demand may therefore be expected.

### The Kritzer Way

insures a product which will hold a continued place for itself on the market. We install plants complete, designed by our own expert engineers to meet your local conditions and turn out a uniform grade of Hydrated Lime of the highest standard, and with the greatest economy in cost of production. The Kritzer Continuous Hydrator, and the accessories installed with it, are the recognized standards in this line.



KRITZER CONTINUOUS PROCESS

**THE KRITZER COMPANY** Chicago, Ill.

## Perfect Lime Burning Economy

has resulted from the use of the

### DUFF PATENT GAS PRODUCER INSTALLATION

This device is in successful and satisfactory operation in the following representative plants:

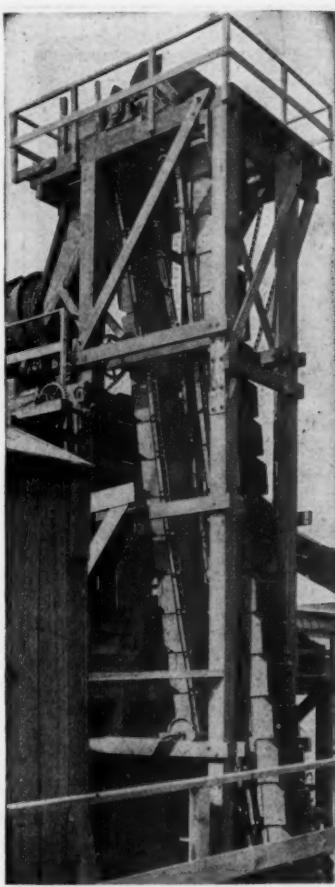
La Garde Lime & Stone Co., La Garde, Ala.  
Ohio & Western Lime Co., Gibsonburg, O.  
National Mortar & Supply Co., Gibsonburg, O.  
Knickerbocker Lime Co., Philadelphia, Pa.  
Dominion Lime Co., Lime Ridge, Quebec.

Installations now being made in other plants.

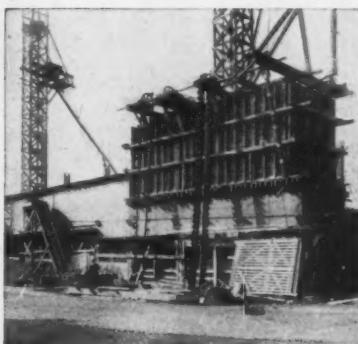
**DUFF PATENTS CO., Inc.**  
PITTSBURGH - - - - - PENNSYLVANIA

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For Handling Sand, Stone, Gravel, etc., for Contractors and Producers



Large Continuous Bucket Elevator for Stone



Contractors Elevating Equipment



Locomotive Crane in Gravel Pit



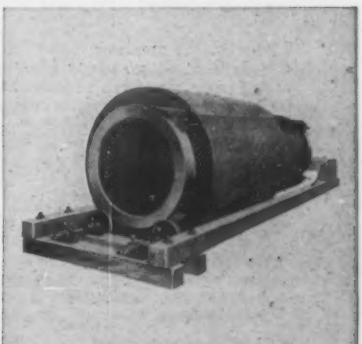
3 Continuous Bucket Elevators



Belt Conveyor for Stone—Write for Catalog 79



Cement Bag Elevator



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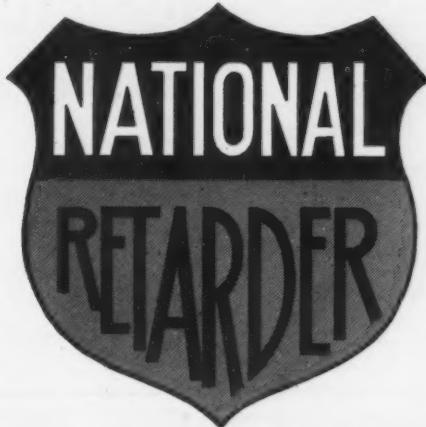
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MEDUSA WATERPROOFING  
MEDUSA WATERPROOFED CEMENT  
(GRAY AND WHITE)



**Sandusky Portland Cement Co.**  
SANDUSKY, OHIO

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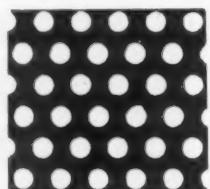
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ROCK PRODUCTS AND BUILDING MATERIALS

APR 28 1915

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# Rock Products and BUILDING MATERIALS

INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XV.

CHICAGO, APRIL 22, 1915.

Number 12.

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THE FRANCIS PUBLISHING COMPANY.

EDGAR H. DEFEBAUGH, Pres.

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### EDITORS:

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Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.

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## Prosperity.

The live juice that comes from our wires of information show very gratifying reports from every part of the country, indicating a very pronounced awakening of activity in the building material trade. It is not a flurry or a temporary splash, or anything of that kind, but the quiet, determined and altogether conservative activity of those who have been for many months awaiting foreign developments to see if those disturbances are to have any permanent bearing upon business operations in this country. The change of attitude of the business man in every line became noticeable the very first day of April, and it has grown with ever increasing circles of influence day by day from that time forward. It now appears that the active business public has definitely concluded that the foreign war, with its attendant agitations, cannot materially affect the permanent progress of American business or interfere with any important commercial arrangement in this country. Consequently American business in all lines is simply proceeding in a normal way, and full-fledged confidence has returned.

Naturally, the beginning of this movement was first apparent in the more rural districts, but it was soon felt in the big cities. The people who handle the tonnage are just as busy as they can possibly be, and statistical comparisons go to show that all of the staple products are moving between the factories and the dealers and consumers in volume a little above the normal, while the tendency is in the direction of expansion.

The continuation of this very condition brings about the much-desired change and is beginning to spell the first letters of the magic word "Prosperity." There is every reason for confidence in the present situation, and in the promises of the immediate future. With that enthusiasm, which is the chief characteristic of American busi-

ness, it now looks like nothing can stop the upward and onward improvement that every business man is finding upon his own desk with each succeeding day of this glorious spring-time.

The evidences of improvement are right now before us, in our very hands. It is up to the men who guide the sales of building materials to shout their enthusiasm and express their confidence to one another, both customers and competitors, so that it becomes that part of each man's thinking organism that it is entitled to occupy when men are resolved to push ahead.

Conscientious action in this direction will plant business confidence on such a firm basis in the next thirty days that nothing can shake it for the rest of the entire season, if each fellow goes at it with a determination to do his part. BEGIN TO DO IT NOW.

Government engineering department has announced a very healthy crop of river and harbor improvements to begin operations at once.

The high cost of oats and corn can be observed in the tonnage of street deliveries. It is a legitimate item of the cost of doing business and must be charged for accordingly.

Road contracts are the principal feature of activity with the rock crushing men these times. The visible mileage for improvement is clearly enough to keep all the crushers busy. It is considerably more than usual.

Waterway improvements throughout the Mississippi basin have become indispensable since the readjustment of rates, brought about by the completion of the Panama canal, became apparent. The big barge canal over the great continental divide between Chicago and St. Louis now looks like prompt action.

Maximum loads on every wagon that goes out count up faster in the profit column than most people would believe. Just add one more bag of cement or hydrated lime on each wagon for a month and see what the difference amounts to. By so doing you eliminate many of the small orders that pile up the delivery cost. There is always a place found on every job for a few extra bags of cement or lime.

Chicago labor strikes in the building trades have met with public disfavor, which is the fate they richly deserve. Those who saw fit to kick up the trouble see themselves mistaken. They now wish literally that they had sawed wood in silence. Now let them buckle down to the longest list of permits in history that is offered this spring and carve off a big chunk of prosperity and the little error will be overlooked.

Farmers are putting in the biggest acreage of great staples that were ever planted. The gold of the world is flowing to American farmers right now. They can afford the best of everything; and now is the time to sell them permanent improvements—silos, barns, feeding floors, and the new fire-proof house. Put it up to them now. Find the handy local contractor who needs the business to do the work for them and get the foreign money while it is plentiful in first hands.

# WITH YOU and ME

Brick plants through western Pennsylvania were visited last week by Charles Bonner and Harry Padosky, of the Bonner & Marshall Co.

Clarence Boyle, Inc., wholesale lumber, 1211 Lumber Exchange Building, Chicago, Ill., announce that Clarence Boyle, Jr., formerly district sales manager of Taylor-Wharton Iron and Steel Co., Connell building, Scranton, Pa., has become associated with them, effective May 1.

J. R. Sullivan has succeeded E. E. Savory in the management of the Boston office of the Giant Portland Cement Co. Mr. Sullivan has been selling cement for the Giant company during the past year and when Mr. Savory resigned his position to go with the Tighe-Loose Contracting Co., he was placed in charge of the office.



MORRIS M. HUNTER.

Morris M. Hunter, who is well and favorably known to the cement trade in Ohio, Indiana, West Virginia and Central Kentucky from the first years that Portland cement was manufactured in America, has just opened district sales offices of the Clinchfield Portland Cement Co., at 1305 Union Press building, Cincinnati, Ohio, where all the "cementers" are extended a cordial welcome to come and make themselves at home in the old-fashioned, cordial way in which Mr. Hunter is known to his friends. He has been living down East for the last four or five years and has collected a full package of down-East stories to add to the stock that he always carried in his satchel. He promises to see every man who is guilty of needing a supply of cement just as fast as he can get around the territory and in the meantime promises to answer the letters of all his old friends, no matter if there is business in sight or not. He is a booster of the wide-open campaign to prosperity and is a shouter for the cooperation of everybody in the trade to make 1915 the biggest year in the history of the business.

B. K. Cochrane, formerly president of the Pittsburgh (Pa.) Builders' Exchange, and now one of the directors of that body, will be toastmaster May 6 at the \$1.00 dinner to be held at the Fort Pitt hotel by the Real Estate Exchange, at which J. Rogers Flannery, chairman of the Pittsburgh Foreign Trades Commission, will be one of the speakers.

An unsuccessful attempt was made to rob the safe of the Patent Vulcanite Roofing Co., at Chicago, last week. While the yeggmen worked for two hours trying to break into the strong box, Arthur McEnery, watchman, was gagged and tied to a chair and compelled to watch the proceedings. When the unbidden visitors left they untied the watchman and gave back the watch they had taken from him.

C. M. Schulter, for many years head of the promotion department under the direction of the advertising department of the Standard Varnish Co., is one of the new attachés of the advertising department of the United States Gypsum Co., Chicago, Ill. He is a very strong believer in helping the dealer sell the goods and will be an able assistant to W. H. Price, advertising manager, who is likewise a strong advocate of "teamwork in selling."

F. P. Jones, general manager of the Canada Cement Co., Toronto, states that the prospects of the cement business for 1915 are not very rosy, but are better than was expected. The company is meeting the falling off in business to a large extent by reducing production costs and in also reducing the selling price in some parts of the country. Further improvements in the organization and the physical condition of the plants are expected to maintain the earnings during 1915.

"Building Material" night of the Chicago Association of Commerce membership conference, held on April 8, was a huge success. On this occasion each building material man present was introduced to the members of the association and interesting talks were features of the evening. Two of the prominent speakers were Frank A. Mitchell, of the Ceresit Waterproofing Co., and E. K. Cormack, ex-president of the National Builders' Supply Association, and vice-president of the Wisconsin Lime & Cement Co.

"Conditions in Canada have been somewhat stagnant during the winter months but now look very much better," writes George Hyde, of Hyde & Sons, Ltd., Montreal, to a friend in Chicago. "I believe we will have a very good summer. The war, of course, has affected everything throughout the country. Large numbers of men who are in training or have left for the front appear to have left a mark on the country, though it is somewhat hard to realize that we in Canada are taking part in such a terribly cruel war."

Lesslie Burwinkle, who was formerly connected with the Barber Asphalt Co., recently returned from the company's offices at Trinidad, and has taken a position as sales manager with the Culley Cement Block Co., Louisville, Ky., of which his father is the head. Mr. Burwinkle is making good right off the bat, as he is familiar with estimating, etc., through having handled that sort of work for sev-

eral years with the Barber concern. He recently landed a nice contract for concrete block foundations for four houses, being required to submit his bid instanter.

M. T. Calef, road engineer for the Rocmac road department of the Philadelphia Quartz Co., has recently opened an office in Harrisburg, Pa. A branch office has also been established in Anderson, Ind. In this territory the company is being represented by Brooks E. Miller.

Henry S. Gray, of J. B. Speed & Co., and M. J. Bannon, of the Bannon Sewer Pipe Co., have been appointed members of a special committee of the Louisville (Ky.) Commercial Club, which will have as its object the establishment of a permanent exhibit of Louisville-made goods. The idea



ROBERT F. HALL.

has been discussed for several months and will probably be put into effect shortly.

J. P. Beck resigned on April 10 as publicity manager of the Universal Portland Cement Co. and has been succeeded by Robert F. Hall, who has spent the last six years in the sales department of that company. Mr. Hall is well known throughout the cement industry because of his activities in its association. He is a graduate of the University of Michigan, where he completed the academic course in 1894 and the law in 1895. He is a resident of Chicago, having begun the practice of law there, on leaving college, in the office of A. W. Green, now president of the National Biscuit Co. He held an important position with that company before going into the cement business with the Universal. He is a member of the University Club of Chicago, the Saddle and Cycle Club, the Military Order of the Loyal Legion of the United States, the Western Society of Engineers, the Advertising Association of Chicago, and several other local organizations. His experience and education equip him well for the work he has now under-

taken. Walter S. Wing, formerly assistant sales agent in the Pittsburgh office, has become Eastern sales manager, and J. L. Nelson, formerly assistant sales agent in the Pittsburgh office, has become assistant to the general sales manager in Chicago and will be transferred to the home office of the company.

Dr. Paul Paquin, recently engaged as health officer of Kansas City, Mo., to reorganize the department and institute steps that will result in a healthful city, is particularly eager to see rickety tenements and other outworn buildings eradicated, and probably means to secure this end will be attained. The annual cleanup in Kansas City, started April 12, will clear the way for the more substantial sanitary steps.

Frank H. Holland, who sells Best Bros. Keene's cement, as the Eastern representative of that popular product in New York, was standing on Pennsylvania avenue in Washington the other day gazing up at the statue of the big "injun" that surmounts the capitol dome, when a flying meteor suddenly paused beside him and a voice cried, "Hello, Frank; come let's fly around and see the sights." Now that was Jesse Haas, erstwhile indomitable building material salesman of Pittsburgh through many eventful vistas of years. Jesse is the Washington representative of Firestone tires and his principal job is to demonstrate their use to his friends who happen to visit the capital city. They spun out to Georgetown and over on the Virginia side almost to Harper's Ferry and circuited around

## The BUILDERS' POET

### Don't Mope!

I.  
No hope of glory beams for me  
On far flung battleline,  
No golden gleam of victory  
Or martyr's death divine;  
No cross of iron will decorate  
My breast, nor will I feel  
The clashing, crashing howl of hate  
That forces steel to steel.

II.  
But yet a battle strong I wage  
And worthy weapons need,  
My foes are sloth, and gloom and rage,  
Discouragement and greed;  
Each day the rugged road is mined  
With fear, despair and doubt,  
And trouble creeps up close behind  
And follows me about.

III.  
My siege gun is the cheery word,  
My howitzer is hope,  
And on my field of strife is heard  
The battle cry "Don't Mope."  
About me lie ten thousand men,  
Bereft of hope and heart,  
To weak to take up arms again  
And make another start.

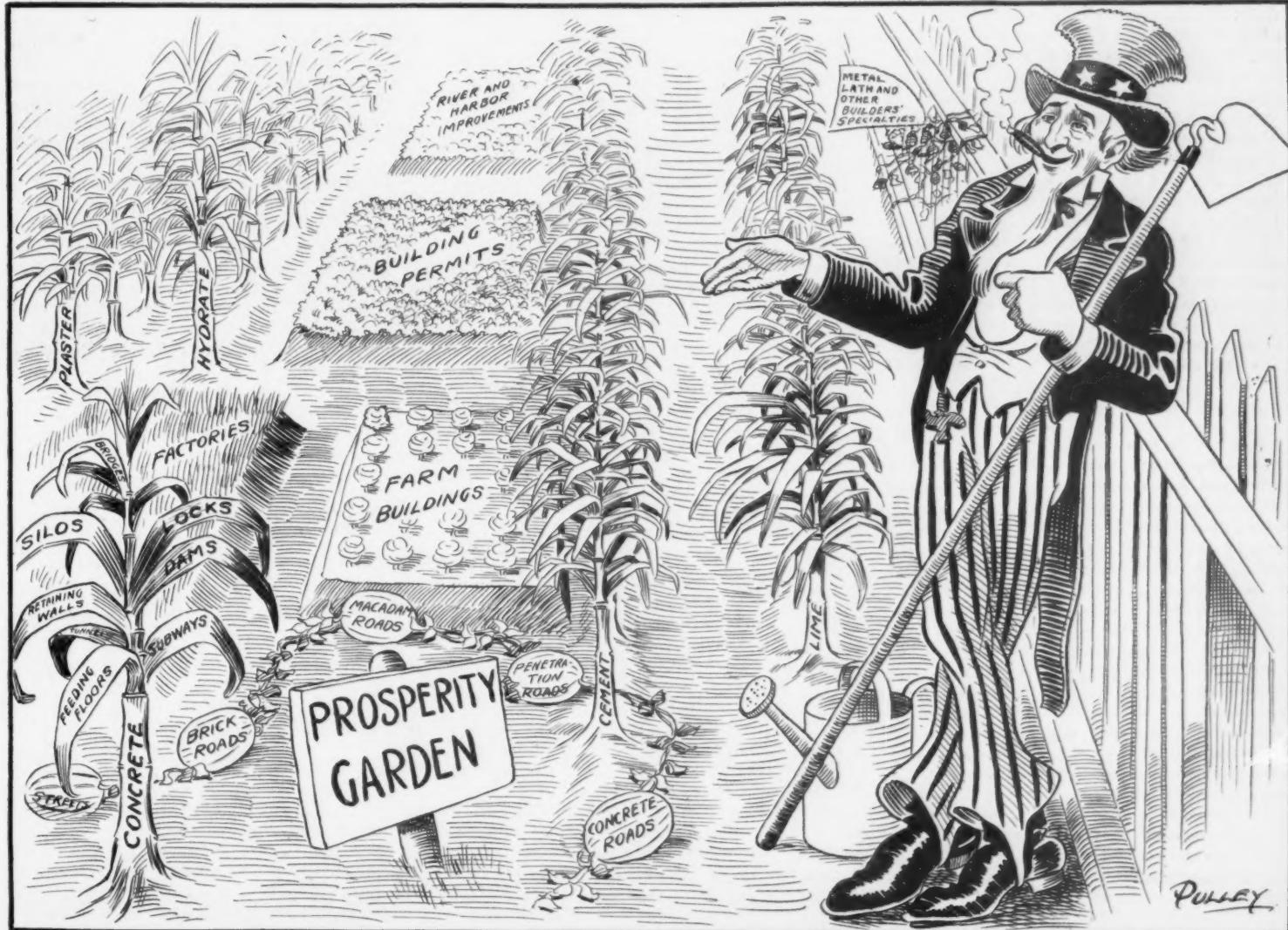
### L'Envoy.

Our business life is always rife  
With trouble, pain and hurry,  
So fill your arsenal with hope  
And make your battle cry "Don't Mope"  
The countersign, "Don't Worry."  
—Frank Adams Mitchell.

through the navy yard and back again. 'Tis said that Jesse gets his ears so hot that they need no bridge in crossing such a stream as the Potomac, but just fly over. Anyway, they had a splendid ride and Jesse sold Frank two or three carloads of Fire-

stone tires just in the same way that he sells anything else to anybody he might happen to be with. At the same time Frank was pumping Keene's cement into Jesse so strong that he almost felt he had gone back into the builders' supply business.

### See How My Garden Grows.



# The RETAILER

## Put Your Hand to the Plow

Not in 10 years have weather conditions been so propitious at the opening of the season for the consumption of building material. Every man in the business, whether he be a dealer or a manufacturer, is gratified as well as surprised with the records that his business shows for the last week in March and the first three weeks in April. In much the majority of cases where comparisons have been made it is found that the same period of former years actually demonstrate a smaller tonnage than does 1915. This is a good start. Like the smashing out of a home-run in the first inning of the first game of the season, all that it takes to win the game is team work and sustained team work and concentration on the batting average to win the game at the end of the season.

We all know what happens in baseball when the first man to go to bat in the first half of the first inning makes a whack at the first ball pitched to him and drives it out for a home run. There is some yelling and monstrous applause and the next man who comes to the bat is so full of enthusiasm that he feels bound to do the same thing. With a start like that, it is mighty hard to put them down.

Now, this picture of words describes exactly what has happened in the first inning of material deliveries this spring. There may be a few exceptional cases, but those fellows have got to study the game and improve their training so that they come up to form with their batting average to keep in the enthusiastic team that is making our group of industries ring with prosperity.

This is the time for team work in the material business. Coöperation between the manufacturer and the dealer was never so perfectly defined as at the present time. The country is full of money, largely in the hands of first producers; for the balance of trade has never been sustained for such a long time in our favor, and never before with such large figures as are used to denote the balances that the custom houses report.

Whatever of gloom there may be in the circles of high finance, it does not attach to actual business operations between the people who live in this country nor between American producers and their foreign customers.

Building materials constitute one of the largest and in many respects the most important division of American commerce. It is only incidentally connected with finance, and is not and cannot be controlled or seriously discommodeed by financiers.

The great work of permanent improvement needed to transform our country into an earthly Paradise has yet scarcely been started. Literally there are millions of miles of roads that have yet to be built, and a most promising and gratifying budget of appropriations is available; the work on a very large number of these has already begun. Every man who has a farmer customer and wants to develop the full volume of his business must systematically promote the improvement of farm property with permanent buildings and structures made from the materials that you handle. You can get instructions in printed form from the manufacturers of cement, of hydrated lime, of gypsum products, of steel lath, and of the other standard commodities that you carry in stock or are conveniently at your disposal.

The time is past when the supply dealer who

wants to make his business grow can just sit on the side street down by the depot and wait for people to hunt him up. The man of today who wants to get into the team work and coöperate in the program of expanding the business of building materials has got to study the printed matter and familiarize himself with the technique of the uses of materials and then go out armed with such knowledge and hammer it into his customers, into the people who ought to be his customers, into the architects and the engineers of his acquaintance.

If you don't know all of the architects and engineers in your city or town, just turn over a new leaf and resolve that you will get acquainted with every one of them before the seventh of May. There is no use in being bashful and putting the thing off another minute; you are in the greatest business that this country has represented within its borders at the present time. You are responsible for many of the permanent improvements in your own locality insofar as your advice and counsel go, and it is pretty certain that you can double the volume of business you handle this very season if you avail yourself of the opportunities for improving your knowledge, which is equivalent to saying improving your power by well written and clearly printed information that is being thrust upon you every day in the mail by the men who need and ask your co-operation to help make your own business more profitable.

Just take this issue of the paper, beginning with the front cover and closing with the back cover, read every word of every advertisement contained therein. Many of those advertisements have cost hundreds of dollars to compose a message in words to reach you inviting you to get busy in your chosen sphere of creating sales which will add to the profits of your business.

If you will do this conscientiously it will doubtless be worth many hundreds of dollars to you, because it will teach you how to be more powerful in your line of business, because you cannot help but absorb a whole lot of information which very many people have no means whatever of acquiring.

This paper is designed to be a business opportunity for you, Mr. Dealer; and every page of it means more business, more profit and broader prosperity if you will only give it the time to let it get into your system and be a part of you for the rest of the season. This is the day of opportunity. Get busy now by improving your methods of developing every possible customer and of selling the maximum order after you have aroused him into action. You can truthfully say to every prospective customer that the time is ripe at this very moment to complete the preliminaries and begin operations upon a more economical basis than can be secured next year or any time within estimating distance of the present time.

The economies of today in the matter of building materials will probably never be available again during the present generation. New markets are being opened up for American goods in other lines, and it is altogether certain that our building materials will find foreign markets very soon in such great volume that there will be no need of catering to domestic requirements so much as has been done in the past. In this appeal to the dealer for team work and coöperation we mean every man in the

business who reads our paper, whether it be the big city supply house, with a dozen to two-score yards, or the dealer of the little town or village where the supply man realizes that he wants to do more business and could conveniently use more money if his business earned it for him.

This is the get-busy time—the season of the year when the husbandman goes out to his fields with the God-given promise that he shall be rewarded in the same proportion as he puts forth his efforts. This promise is never made to apply to the farmer alone, but to every man in every field of endeavor to work conscientiously for the expected reward.

### Pennsylvania Dealers to Meet May 11.

In a letter to fellow dealers, George F. Erich, president of the Building Material Dealers' Association of Eastern Pennsylvania, announces the date of the next meeting of the organization and solicits the assistance of the builders' supply men in the following manner:

"Co-operation is essential and must bring results. What more conclusive evidence is necessary to prove the correctness of this statement than the recent favorable attitude of the cement manufacturers in recognizing the importance of the building material dealers in the distribution of their product? Although some of the manufacturers had shown a willingness to protect the dealers' interests, it was not until the efforts of the dealers' associations were combined that the real recognition to the extent of a five cent per barrel differential was established for carload shipments, regardless of quantity.

"Our association is the result of the interest manifested by a few dealers who had long been following the efforts of the New Jersey, New York and New England associations and had been waiting the proper moment to start a similar organization in Pennsylvania. A plan was discussed and an invitation sent to all building material dealers in eastern Pennsylvania to meet in Reading on April 9, 1914, and 34 dealers reported. Through the enthusiasm manifested a permanent organization was effected. The benefits to be gained by you may not at first seem impressive, but each advantage gained in the recognition of any one branch of our business renders possible similar results in the industry as a whole.

"We are making arrangements for a meeting to be held in Philadelphia, Tuesday, May 11, 1915, and hope you will plan to be 'among those present.' Later advice as to hour and place will be sent in due time."

### F. S. PEABODY HEADS MILWAUKEE CONCERN.

J. B. Whitnall has resigned as president of the Pennsylvania Coal & Supply Co., well known coal and building material concern of Milwaukee, but will remain on the board of directors. Ill health compelled Mr. Whitnall to retire from active business.

Frank S. Peabody, of Chicago, has been elected president to succeed Mr. Whitnall. W. E. Caldwell has been chosen vice-president, and John C. Post, secretary and treasurer. Frank W. Fellenz is general sales manager of the coal department and Edward F. Whitnall is manager of the building material department.

## Building Materials at the San Francisco Fair.

An exhibit in the Varied Industries building at the Panama-Pacific International Exposition that is attracting more than ordinary attention is that of the Los Angeles Pressed Brick Co., Peder Pedersen, of the United Materials company, local distributor for the company, being in charge. Among the features of the combined exhibit is a fine display of "rug" brick, the newest thing of its kind on the market, by the way, and an elegant hand-made mantel panel. Also, in the Mines building the Los Angeles company has on display a section of sewer constructed with the Frost patented sewer brick which, it is claimed, reduces the cost of sewer construction to the minimum. The Frost brick, too, is a new thing, and there has as yet been only one sewer actually constructed with it, that being at Santa Monica, Cal. The company is preparing to begin the manufacture of these brick on a large scale at its Richmond plant.

The California State Highway Commission also has an interesting exhibit in the Liberal Arts building, including paving materials of various sorts, as well as samples of different kinds of pavement.

The Philippine building contains one of the best displays of foreign building materials shown at the Exposition. It includes cement, concrete, burned clay brick, cement brick and sand-lime brick. The Australian building contains a large assortment of building and ornamental stones, including a large assortment of marbles from New South Wales.

## Chicago's Strike Rivals Get Together.

Negotiations, which are expected to end in the settlement of the carpenter's strike in Chicago, will start on Friday when the arbitration committee of the Carpenter's District Council and the Carpenter Contractors' Association meet. It is anticipated that the contractors will renew the offer of two and one-half cents increase an hour for the last 18 months of a three-year contract. The carpenters are now getting 65 cents an hour.

When the carpenters of Chicago laid down their tools on April 15, a gigantic building strike, affecting 100,000 men and \$30,000,000 worth of construction, abruptly and completely halted spring building in Chicago. In addition to the carpenters a number of other unions were either on strike or locked out because of the desire on the part of the Building Construction Employers' Association to put in force a uniform contract with the workers which will prevent sympathetic strikes in the building trades.

While the strike situation is naturally tying up building construction in Chicago, plans are being prepared for a number of large buildings in the downtown district and thousands of homes and flat buildings in the residence sections.

The Chicago Telephone Co. has recently purchased a tract 140 by 180 feet for a \$750,000 building.

The Elks have formally approved the plans of their new club house which will be located on the site of the present building at 174 West Washington street. The building will be eight stories in height and cost \$200,000. The construction will begin in May.

Work is still progressing on the new building of Buck & Rayner at the corner of State and Adams streets. The proposed name of the building is the State and Adams building, but a prize of \$100 is being given to any one suggesting a better name. The steel work of the structure which, when completed, will be 15 stories in height, is almost finished and workmen are busy finishing the exterior of the building with terra cotta. The building will harmonize with the Consumers building, to the south, and the Republic building, across the street and to the east. Both of these structures are taller than the one now under construction.

In commenting upon the strikes in the building trades of Chicago, Blaine Smith, sales manager of

the Universal Portland Cement Co., says that he does not take the strikes seriously. He says that from all appearances it is illogical that labor should conduct a successful fight at the present time and not only the fundamentals seem to be against the strikers but public sentiment as shown by the cartoons and editorials in the daily newspapers and the right rank and file of labor unions are opposed to the stand taken by the organizations that are now out. Mr. Smith looks for improved conditions by the first of May.

## T. J. Miller Heads New York Exchange.

New York, April 19.—The thirty-fourth annual election for officers and trustees of the Building Material Exchange of the city of New York was held in the exchange rooms in the Woolworth building on Monday, April 12, and resulted in the election of Thomas D. Miller of the Builders' Material Supply Co., of Newark, succeeding Joseph F. Miller, of the Lawrence Portland Cement Co.

A conspicuous feature of the election was the selection for the sixth consecutive term as treasurer of William C. Morton, sales manager of the Consolidated Rosendale Cement Co., New York. C. J. Curtain, of the Farnham Cheshire Lime Co., New York, was elected vice-president. These are the new trustees: Thomas D. Miller, C. J. Curtain, William C. Morton, George A. Mollitor, who is secretary of the Exchange; T. I. Gleason, P. J. Heaney, Walter C. Schultz, Daniel Darrow, William T. Roberts, V. W. Tyler and J. C. Detwiler. The inspectors of election were Orin F. Perry, Ernest Braun, Jr., and H. P. Brown.

The financial condition of the Exchange was shown to be extraordinarily good with \$11,051.62 on hand April 15. The membership certificates now have a book value of \$83.72. Retiring President Miller's report showed that the exchange had been open 255 days last year with an average attendance of 16. There were 112 visitors. The necrology showed the decease of John Messinger, who joined Dec. 4, 1896, and died April 20, 1914; H. B. Homan, joined Oct. 2, 1882, and died May 24, 1914; John C. Morton, joined April 9, 1884, and died Oct. 2, 1914, and Uriah F. Washburn, joined Aug. 9, 1884, and died Aug. 7, 1914.

The Exchange now has a membership of 123.

## HOME FUEL & SUPPLY CO. DOUBLES FACILITIES.

The Home Fuel & Supply Co., of Toledo, Ohio, which absorbed the Home Fuel Co. a year ago and which is now dealing in wholesale and retail builders' supplies, in addition to its widely established coal business, is now opening up one of the most efficient yards in the city. It is located at the intersection of the Wabash Railroad and Broadway.

The company has leased a thousand feet of ground between the Wabash Railroad and the river, which gives full trackage over the entire ground and also dockage for lake sand and gravel.

At present this company has a well equipped yard on the Michigan Central Railroad at Monroe street, where extended improvements have been made to increase efficiency, but owing to the volume of business the firm has been compelled to open up a south side yard.

The president, F. R. Cornell, is at present traveling freight agent of the Wabash Railroad, but he will become actively engaged with the business of this company on May 1. Previous to Mr. Cornell's services with the Wabash Railroad, he was affiliated with coal interests. Vice-president M. E. Taylor, who is now with the New York Central, will have charge of the Broadway yard. Secretary and treasurer R. W. Taylor is general manager of the company, with office at the Monroe street yard. The officers, together with H. L. Rakestraw and J. W. Smith, comprise the board of directors.

## B. F. Marsh Is Dead.

We were shocked to hear of the death of Benjamin Franklin Marsh, president of the B. F. Marsh Co., Worcester, Mass., who died suddenly on April 7, about noon. R. H. Whitney, vice-president and treasurer of the company, knowing the warm friendship that existed between Mr. Marsh and the staff of this journal, sent us the first announcement of the sad event. While he was one of the early subscribers to ROCK PRODUCTS AND BUILDING MATERIALS, we never personally made his acquaintance until about 11 years ago and from that time forward his high personal character and pronounced business ability has won our admiration and respect. He was an attractive companion, generous, patient and loved the society of his fellow-men. To know him was to learn to love him, and his demise leaves a void which will not be filled in the memory of those who know how to appreciate such a man. He was an enthusiastic Elk and for many years attended the National meetings of the high officials of that order, and was one of the most popular men in the high councils of the B. P. O. E.

For many years he had been a member of the National Builders' Supply Association and was a charter member of the New England Builders' Supply Association.

He was married in July, 1910, to Mrs. F. A. Newkirk, of Detroit, on the occasion of the Elks' National convention in that city, and she survives to mourn his loss.

He was 55 years of age, born in a New England town on the upper reaches of the Connecticut river, and has lived in Worcester since he was a boy. He went into the builders' supply business in 1888 and his establishment grew to be one of the leading business concerns of New England. The firm was transformed into a corporation in 1911, at which time the operations were considerably enlarged. He was a man of sterling qualities and one which the builders' supply industry could scarcely afford to lose. Peace be to his ashes.

The following expressions from his associates and competitors in business speak more forcefully than we could write their appreciation and high esteem of B. F. Marsh as a man and as a co-worker.

Charles M. Kelly, president of James C. Goff Co., Providence, R. I., and president of the New England Builders' Association, says:

Mr. Marsh had been for many years a dealer in masons' materials in Worcester and was very well known, not only to the manufacturers whose material is sold in that vicinity, but also to dealers in many parts of New England.

He was for several years a member of the National Builders' Supply Association and the company of which he was the head was one of the original members of the New England Builders' Supply Association. He was a faithful attendant at all the meetings of the last-named organization and was always ready to work and give advice for the accomplishment of the objects for which the dealers have organized.

In the death of Mr. Marsh his associates in business have the sympathy of a large circle of friends and the building material trade in New England will miss his attendance at their regular meetings.

Frank H. Johnston, president of the City Coal & Wood Co., New Britain, Conn.:

I feel that in the death of B. F. Marsh, of Worcester, that the building material trade of New England has suffered a very great loss.

In these days of peculiar conditions in our trade the loss of a man who always stood for the fine ethics of the business is one which will be felt for some time.

F. L. Powers, president of the F. E. Powers Co., Worcester, Mass.:

B. F. Marsh, or "Ben," as he was known to the boys here, was the salt of the earth and I, for one, was terribly shocked to hear of his death.

It seems as though it is always the best ones that are taken, but he is better off now than we are.

R. C. Cleveland, president of the Smith-Green Co., Worcester, Mass.:

I was greatly shocked and grieved to learn of the death of our friend and contemporary, B. F. Marsh, of Worcester.

I knew, liked and admired Mr. Marsh for a period of nearly 20 years. He will be missed by the trade and the business community of Worcester and vicinity in general.

E. A. Wilson, of the E. A. Wilson Co., Lowell, Mass., secretary of the New England Builders' Supply Association:

While I had not the pleasure of knowing Mr. Marsh personally for any length of time, I am fully aware that he was regarded among the supply dealers as one of the leading men in our line of business.

Personally, I regret the loss of so valuable a man to the trade and feel that we have too few men of his sterling character.

## Plan Filings Cause Genuine Optimism.

Building material interests throughout the country seem to be taking more optimistic views of the immediate prospect of building activity. It has been established that the rate of plan filings is nearly normal. Bradstreet's showing a shortage of only 2.2 per cent over the filings of the first quarter in 1914. On the other hand trade union reports show a rate of employment not in proportion to this condition. The fact therefore remains that either there is an artificial stimulus to building plan filing, as is the case in New York where a new building code soon will be in operation, or to abnormal labor conditions as is the case in Chicago, where at this writing the building situation is practically at a standstill owing to strikes and lockouts.

Both conditions would tend to make plan filings non-reflective of the rate of building construction when gauged by the entire country's reports (115 cities being under consideration).

But reliable building report companies offer more consoling data. Of the \$148,394,599 worth of building construction planned for in the first quarter of this year, \$38,000,000 was actually under way on April 10. Reports show that \$71,526,000 worth was being figured on, leaving approximately \$38,868,599 still to come out.

Manufacturers' complaints that while all this building plan filing movement is great they have not yet felt a proportionate improvement in demand, are accounted for in this statement of affairs. There are few agents who are not figuring a fair quantity of work. Everybody is hungry for business and therefore competition is keen, prices are squeezed down to the hilt so the pending prosperity is not shown in the purchase of large stock by dealers, nor by re-employment of hands by manufacturers in large quantities.

But the improvement is nevertheless to be noted. Men are not now being laid off by the big companies, the railroads or business houses. The New York stock exchange activity has resulted in 4,300 stenographers and typists and clerks being re-employed in the financial zone of New York alone.

## PLACES EMPHASIS UPON GUARANTEE.

Patrons of the Standard Material Co., of Chicago, are being encouraged to reweigh loads of stone, sand, lime, coal and other commodities before accepting them. In a guarantee given by this company a promise is made to donate \$100 to any charitable institution for each instance where short weight is found. In addition to the donation the company promises to make the finder of such mistake a present of a load of material. According to the statement of Walter Wood, president of the company, inspectors from the city sealer's office have "picked up" a number of loads of material and coal during the past few months and reweighed them. In each case the weights on the load tickets were found to be correct. A detailed report of the reweighing is on file in the city sealer's office and the Standard Material Co. is advertising this fact, as it substantiates the statements of full weight on every load sent from the yard.

## NEW CONTRACT FORMS IN USE.

The recent adopted contract forms agreed upon by the American Institute of Architects and the National Association of Builders' Exchanges, have been put to use in connection with the plans and specifications of a Methodist Church to be erected at Louisville, Ky. The new contract is the result of the best effort of those two associations to establish more satisfactory relations between the architect and the contractor, the man who furnishes materials for construction and the owner of the building. The object of the contract is to

make all specifications so definite and well understood as to accurately define the rights of all parties at interest and to eliminate the losses, delays and embarrassments now so often incident to failure to agree as to interpretations of building specifications.

## What Is Proper Differential on Lime?

By Henry M. Camp,  
Proprietor and Manager of Lime Service Bureau.

Is 25 to 50 cents a ton differential between dealer's and consumer's price on hydrated lime and ground lime a sufficient inducement to the dealer to promote the sale of these products?

A manufacturer will often spend considerable money in advancing arguments in favor of the use of his commodity through well conducted publicity in newspapers, or through circular matter, which is necessary at times and probably does much good, but how often we find that the manufacturer fails to give the proper consideration to the real value of the dealer handling his product and charged with the work of promoting its sale.

It is very natural for a dealer to give his best service to the sale of the article or commodity that yields him the greatest profits, with consideration, of course, to the expenses incident to handling, space for storage, responsibility of accounts, etc. In the case of bulk lime, on which the average lime manufacturer allows a dealer's commission of from 25 to 50 cents a ton (mostly 25 cents), the 25 cents commission on a car of lime of 20 to 30 tons amounts to five or six dollars. Lump agricultural lime is still a popular form of lime with the farmer, and in the opinion of the writer by investigation of this subject, the 25 cents per ton commission is not enough to justify the dealer to go to the expense of canvassing his agricultural territory to promote the sale of this product. But, a minimum commission of 50 cents on agricultural lime, with no delivery charges to be borne by the dealer, but who shall guarantee the payment of all accounts, would undoubtedly result in a more profitable service from these representatives who are on the ground and in daily touch with the consumer.

In the case of ground lime and hydrated lime, which probably yield the manufacturer his best profit, is it not to his interest to create as large a consumption of these products as possible? Certainly, it is, and how is this best done? By establishing a good line of responsible dealers in the various communities and pay them to take an interest in ground and hydrated lime. Give them not less than 50 cents a ton, and in cases where the dealer shows a disposition to increase his lime output, give him a still greater commission that will help him with his expenses of canvassing, soliciting business, watching bags, carrying a good stock on hand for prompt deliveries, etc. Inspire your dealer to hustle for business and make it worth while for him to talk lime. Make it a specialty, and tell of its many values as a soil food and stimulant.

The result of the adoption of more generous commissions may be that commercial fertilizers, which carry a higher proportionate commission than lime and which are so often improperly used by the farmer, will take a back seat, for the use of lime, if properly explained by the dealer to the farmer, will mean more consumption and ultimately better fertility and greater productiveness.

Co-operate with your dealers, who are your mouth-pieces, in a manner that will stimulate them to the interest which belongs to lime. Twenty-five cents a ton won't do it.

The Rosslyn Woodworking Co. has been incorporated at Rosslyn, Va., with a capital stock of \$25,000 for the purpose of engaging in the lumber and building material business. The officers, all of whom are located in Washington, D. C., are as follows: Herman E. Burgess, president; James L. Marshall, vice president and treasurer; James T. Kenyon, secretary.

## BELIEVES WAR HELPS MATERIAL INDUSTRY.

When asked his opinion of trade conditions R. R. Cookman, treasurer of the Webster Lumber & Supply Co., of Fitchburg, Mass., said: "Even now we are receiving inquiries from abroad for materials and so many orders are being booked in such large quantities that it has a tendency to strengthen the market. For instance, about all the foreign glass factories are closed. Belgium made more glass than any other part of Europe and not many years ago the United States bought about all their glass from Belgium, but now Europe must buy from us, which means such demands for American-made glass that the price will advance the same as wheat, which they must have and will pay the price for. This also applies to lumber, nails, builders' hardware and plumbing supplies. Money will be kept at home this year. Tourists will stay in America, which means several millions more dollars to be spent in America, more money for summer hotels and boarding houses and seashore and lake residences."

## WILL MANUFACTURE FIREPROOF BUILDING MATERIAL.

Abraham White, inventor of "Firex," a new chemical combination for the fireproofing of combustible materials, and with which the Panama-Pacific International Exposition is fireproofed, is authority for the statement that Sacramento, Cal., is to be the seat of manufacture of his product on a large scale. Mr. White says he will within a few weeks begin the erection of a large plant at that city, having already purchased the ground. The Sacramento plant will be owned by "The Safety First Firex Co.," a branch of the parent company, the "National Safety Fireproof Products Co.," of Berkeley. The general manager of the Firex company is O. R. Baxter, who was in the office of the state architect for five years.

## MITCHELL CHANGES FIRM NAME.

Wm. S. Humbert, Inc., Niagara Falls, N. Y., has changed its name to Mitchell Builders' Supply Company, Inc. William S. Humbert, the incorporator of Wm. S. Humbert, Inc., severed his connection with the company in 1910, and has not been interested in it since that time, the management and ownership being vested in Burton J. Mitchell. This fact, and the nature of the business, is indicated in the new corporate title. The general policy will remain unchanged.

In a directory published by the Chattanooga Manufacturers' Association, which is issued in connection with the permanent exhibit of that organization, are to be found the names of manufacturers of building materials located in that city. The booklet is complete in that it gives, in addition to the name of the firm, its officers and a list of the materials manufactured. Members of the association closed their plants on New Year's day, thereby giving their employees a holiday and an opportunity to visit their exhibit, which had been well advertised.

John Atkinson, formerly president of the Philadelphia Builders' Exchange, with which he has been connected for 25 years, died recently at his home in Llanerch, Pa. He had been ill for many months. Mr. Atkinson was one of the organizers of the Master Builders' Association 18 years ago. During his career as a master bricklayer he assisted in the building of the Bourse, Drexel Institute, Reading Terminal and the Mary J. Drexel Home. He was 65 years of age and is survived by a widow and four children. He has been a member of the Manufacturers' Club for many years.

### More Baleful Agitation.

The Department of Commerce is at it again. The Federal Trade Commission is attempting to put the retailer of lumber and building materials out of business, which is its custom at the Johnny Jump-up time each year.

A correspondent of the Chicago Tribune, under date of April 22, proceeds to announce that wholesale prosecution of retail lumber dealers in all sections of the United States may be the result of the recent abnormal increases in the prices of lumber used chiefly for building purposes, charging a combination in restraint of trade.

The fact is, the only organizations of what you might call "combinations" in the lumber trade have been organizations to protect dealers in the matter of extending credits. Any man who knows modern business and is acquainted with the contracting system of this country, knows that there are a lot of men making contracts for material and constructing buildings who lack common, every-day knowledge of business ethics and are the most irresponsible people on the face of the earth. They mean well—the majority of them—but they are between the devil and the deep sea. The architects specifications are everlasting cut to pieces to meet the conditions of price and so is the contractor's figures cut to the absolute limit, because of wide-open and uneducated competition.

The dealer in Freeport, Ill., or Kalamazoo, Mich., or elsewhere, who sells two bags of cement or a few pieces of 2x4's naturally is not going to sell such items at the wholesale price. If he did he could not get carrying and delivery charges out of the transactions, let alone a profit.

When there is a house bill to figure the competition usually makes the price fall to a basis that is out of line, and if the investigators of the Department of Commerce or Department of Justice, or any other department down at Washington could be made to comprehend such matters, they would find these things out.

It has been admitted time and time again by the various heads at Washington, from the President to the chief of each department, that business in the United States cannot be conducted without associations. Associations are not any good unless there is a common understanding amounting to an agreement of some kind. The only chance for an organization to live without an agreement of some kind is established confidence, because it has been in existence for 20 years and the free masonry between the men in the industry has become so consolidated into an unexpressed policy that they do things by habit as they did them 20 years ago, and then it takes a gymnast, an orator and a man who has the confidence of every one in the industry to keep them in line.

Now, here we are indicted by the Government's clerks because they say:

1. That retail lumber dealers have a nationwide combination in violation of the Sherman anti-trust law and in restraint of trade.
2. That the combination fixes prices, restricts trade territory, and completely stifles competition.
3. That the retail dealers, by means of boycotts against mail order houses, department stores, and mills, make it almost impossible for the consumer to buy lumber without paying the combination's percentage.
4. That lumber mills are prohibited by the combine from selling their products directly to the public, unless they pay the retailer of the district 10 per cent of the purchase price.
5. That mills that refuse to recognize the combination of retailers and their price schedules are subjected to attacks and ruinous boycotts.

The fact is, the United States Government, if it continues its present policy of bulldozing the building material trade in lumber and other lines, will put the business man off the map.

We think this is largely due to the same ignorance that prevails among a lot of our contractors and some of our dealers. To be brief, politics and the putting in responsible positions of men who cannot make a living in their own home town, is throttling the commercial interests of this country, and it is time the business country got up in its might and demanded justice.

There are no more patriotic people in the world than the business men of America. They have the courage, enterprise and back-bone to pay the taxes and maintain the Government. You do not find men of the character of Abraham Lincoln or William McKinley among the pettifogging politicians who are always maligning the commercial interests of the country; they, on the other hand, were going out of their way at all times to make our citizenship Americans, and country for the whole people.

It does not do any good to talk back to the Government. It is impossible to teach them anything as long as the present political system obtains of putting people into jobs who could not earn \$2.00 a week at home. For goodness' sake let us have at least, for once, a fair deal at Washington. We hoped we would get one with the Trade Commission that is now in effect; we are still hoping so. But every time we have courage to believe that patriotism is directing the efforts of the Government, we are stunned to see an interview like that referred to, practically authorized by the Department of Commerce. Then we wish we were Germans, or citizens of another country where the Government gives equal rights to business men, labor employees and farmers.

### GROWING MARKET FOR METAL LATH.

The use of expanded metal lath in the Brazilian market of South America is growing in popularity, especially for ceilings and partitions. The qualities of the lath, which enables the builder to make ceilings and partitions extremely thin, but at the same time practically fire and vermin proof, appeal to the building trades of this district.

At the present time the market is being supplied with the French "metal déployé," somewhat similar to American expanded metal lath but heavier and with square instead of hexagonal mesh.

### NEW INCORPORATIONS.

The Canadian Fibre Board Co., Limited, have been incorporated with head office at London, Ont., and capital stock of \$40,000. The provisional directors are W. Buchanan, J. S. Ferguson, E. Buchanan, C. W. Coles and R. G. Ivey. The company is given power to purchase, manufacture and sell all kinds of building material.

The Canadian Wall Board Co., Limited, has been incorporated with head office at Toronto and capital stock of \$50,000, to manufacture, buy and sell wood fibre, pulpwood, wood pulp, either mechanically or chemically prepared, paper and other articles. The incorporators include H. Riley, W. B. Sturup, T. S. H. Giles and W. C. H. Swinburne, all of Toronto.

Contractors Material Co. of Des Moines, Iowa, with a capital stock of \$50,000, has been incorporated by Don R. Shaw, W. F. Thomas and R. E. Worcester.

The Standard Lumber & Supply Co. is a new retail lumber and builders' supply concern in Pittsburgh, Pa., which has been organized under Pennsylvania laws by A. B. Morris, G. F. Pollock and W. C. C. Johnston. The concern will make a specialty of sand, gravel, brick and stone.

The Builders' Supply Co., of 235 East Main street, Lexington, Ky., has sold its entire business to the Beard & Lyons Co., a well-known concern handling roofing and stoves. The Builders' Supply Co. was organized several years ago under the management of George Sudduth, Sam Reynolds and C. E. Reese. The Beard & Lyons Co. will make improvements in the building and will move their own stock to the new location shortly. C. E. Reese will continue in charge of the electrical department.

### Election Time—Vote the Ticket Straight.



# NEWS of the TRADE

## Retailers Getting Busy.

Pittsburgh, Pa., April 19.—Retailers are getting busy. With the letting of road contracts and the splendid weather of the past few weeks, which has encouraged the starting of building operations, retail stocks are rapidly being sold out and as rapidly replenished. In road work the prospects are excellent for a good year. In boroughs, towns and even in the city there is a large amount of work in prospect and very much of it is being let this month. The building situation is not so satisfactory. Some reports indicate that outside of the city, building is going ahead on a pretty good scale. In the city, however, there has not been the number of contracts awarded that was expected one month ago. The brick concerns and sewer pipe companies are probably doing the most business. Lumber dealers as a rule loaded up pretty well in December and January and for this reason are buying slowly until they can move out their winter stocks of lumber.

Hon. John T. Moore, of Allegheny county, has introduced a bill in the Pennsylvania state legislature authorizing counties to build trunk sewers and sewage disposal plant by a tax of not more than two mills on the real and personal property. Some objections to the bill have been made by the commissioners of Allegheny county and other counties where costly public building improvements are already under way.

The Pittsburgh Builders' Exchange held a very successful luncheon April 8 with 100 members present, at the Fort Pitt hotel. Hon. M. Clyde Kelly was speaker. The \$1.00 dinner of the exchange on the following week was also a success, with F. G. Webber, of New York City, as speaker.

## San Francisco Building.

San Francisco, April 15.—Building activities in San Francisco were given marked impetus during the last week by the awarding of two big contracts, totaling, combined, \$1,250,000. These contracts are for the construction of a brewery, to cost \$750,000, at Fifteenth and Bryant streets, by the newly-formed Rainier Brewing Co., and for the construction of a \$500,000 warehouse for Dunham, Carrigan & Hayden at Fifteenth and Kansas streets.

The brewery contract was obtained by the Sound Construction Co., and calls for a brick and steel structure to be rushed to completion by Nov. 1, 1915.

L. J. Devlin is the architect for the Denham-Carriagan building, and the contract for its construction was awarded to James Fennell, San Francisco.

## Building Permits Show Increase.

Building construction in the United States is on a fairly satisfactory basis and compares favorably with conditions a year ago. Permits were taken out in 101 cities in the country in March for 2,135 buildings in excess of the number for the same month a year ago, while there was a decrease in cost of \$9,732,574, or 12 per cent, according to official reports to Construction News. Permits were taken out in 101 leading cities in March for 26,751 buildings, involving a total cost of \$68,406,846, against 24,616 buildings for the corresponding month a year ago, aggregating in cost \$78,139,420. Building construction in some of the New York,

New Jersey and New England cities, as well as in leading cities in the central and lake states, was characterized by wonderful activity, and while there were material decreases in some sections the conditions are on the whole encouraging. Losses were great in the South as well as in some of the leading points on the Pacific coast, both of which were to have been expected. The figures in detail are as follows:

| City                                  | No. of<br>Bldgs. | 1915<br>Estimated<br>Cost. | No. of<br>Bldgs. | 1914<br>Estimated<br>Cost. | %<br>Gain. | %<br>Loss. |
|---------------------------------------|------------------|----------------------------|------------------|----------------------------|------------|------------|
| New York (Boroughs<br>and Bronx)..... | 740              | \$ 7,633,492               | 798              | \$ 9,748,428               | ..         | 22         |
| Chicago.....                          | 1,096            | 7,408,750                  | 931              | 7,759,800                  | ..         | 4          |
| Philadelphia.....                     | 8,480            | 5,388,965                  | 1,807            | 5,175,530                  | 4          | ..         |
| Boston.....                           | 467              | 4,719,000                  | 400              | 4,400,000                  | ..         | 8          |
| Brooklyn.....                         | 1,480            | 4,040,115                  | 839              | 4,786,120                  | 15         | ..         |
| Detroit.....                          | 1,468            | 4,022,083                  | 1,409            | 4,070,265                  | ..         | 1          |
| San Francisco.....                    | 888              | 8,839,490                  | 870              | 8,300,780                  | 33         | ..         |
| Minneapolis.....                      | 619              | 1,405,038                  | 561              | 3,956,475                  | ..         | 64         |
| Cincinnati.....                       | 541              | 1,372,530                  | 549              | 3,620,910                  | ..         | 57         |
| St. Louis, Mo.....                    | 1,052            | 1,180,000                  | 1,181            | 1,000,000                  | ..         | 18         |
| Los Angeles.....                      | 1,389,378        | 910                        | 1,450,034        | ..                         | ..         | 18         |
| Pittsburgh.....                       | 819              | 1,124,964                  | 1,116            | 2,179,756                  | ..         | 48         |
| Rochester.....                        | 488              | 1,006,997                  | 304              | 958,618                    | 5          | ..         |
| Seattle.....                          | 887              | 1,000,000                  | 274              | 775,080                    | 29         | ..         |
| Milwaukee.....                        | 490              | 942,921                    | 363              | 896,185                    | 25         | ..         |
| Indianapolis.....                     | 743              | 889,485                    | 750              | 780,000                    | 18         | ..         |
| Watertown.....                        | 819              | 861,531                    | 878              | 918,369                    | ..         | 4          |
| Albany, N. Y. City.....               | 814              | 845,598                    | 423              | 1,518,280                  | ..         | 44         |
| Buffalo.....                          | 473              | 830,000                    | 309              | 660,000                    | 25         | ..         |
| New Haven.....                        | 146              | 835,476                    | 105              | 495,380                    | 94         | ..         |
| St. Paul.....                         | 205              | 829,654                    | 139              | 8,345,948                  | ..         | 65         |
| Toledo.....                           | 288              | 748,258                    | 238              | 820,000                    | 37         | ..         |
| Washington, D. C.....                 | 716              | 714,000                    | 897              | 1,544,778                  | ..         | 54         |
| Seattle.....                          | 813              | 689,675                    | 801              | 928,480                    | ..         | 35         |
| Newark.....                           | 818              | 643,395                    | 145              | 321,240                    | 100        | ..         |
| New Bedford.....                      | 587              | 577,777                    | 121              | 463,510                    | 26         | ..         |
| Springfield, Mass.....                | 161              | 570,558                    | 138              | 688,018                    | 1          | ..         |
| Columbus.....                         | 252              | 510,000                    | 180              | 650,000                    | 22         | ..         |
| Louisville.....                       | 599              | 510,100                    | 664              | 654,400                    | 21         | ..         |
| Portland, Ore.....                    | 587              | 503,755                    | 705              | 882,965                    | ..         | 43         |
| Oakland.....                          | 813              | 600,278                    | 388              | 625,907                    | ..         | 20         |
| Akron.....                            | 243              | 487,605                    | 809              | 288,160                    | 55         | ..         |
| Charlotte.....                        | 148              | 464,287                    | 89               | 182,950                    | 284        | ..         |
| Evansville.....                       | 149              | 426,438                    | 110              | 300,000                    | 274        | ..         |
| Hartford.....                         | 144              | 390,000                    | 94               | 119,735                    | 268        | ..         |
| Worcester.....                        | 164              | 533,860                    | 119              | 351,228                    | 1          | ..         |
| Memphis.....                          | 282              | 485,756                    | 979              | 370,000                    | ..         | 7          |
| Albany.....                           | 282              | 482,855                    | 188              | 947,900                    | ..         | 64         |
| Omaha.....                            | 84               | 333,860                    | 147              | 351,165                    | 4          | ..         |
| Erie.....                             | 159              | 300,900                    | 110              | 180,000                    | 41         | ..         |
| Lawrence.....                         | 84               | 280,000                    | 91               | 78,040                     | 301        | ..         |
| Passaic.....                          | 29               | 288,280                    | 18               | 64,128                     | 350        | ..         |
| Richmond.....                         | 184              | 384,886                    | 170              | 539,848                    | ..         | 47         |
| Atlanta.....                          | 977              | 27,417                     | 843              | 861,644                    | ..         | 59         |
| Grand Rapids.....                     | 198              | 260,439                    | 817              | 1,389,258                  | ..         | 79         |
| Jacksonville.....                     | 80               | 255,800                    | 60               | 250,000                    | 5          | ..         |
| Fort Wayne.....                       | 97               | 244,500                    | 90               | 176,775                    | 44         | ..         |
| Youngstown.....                       | 90               | 206,000                    | 81               | 146,495                    | 39         | ..         |
| New Orleans.....                      | 194,888          | 69                         | 170,000          | 13                         | ..         | 15         |
| Trenton.....                          | 183              | 199,888                    | 69               | 187,080                    | 13         | ..         |
| Tacoma.....                           | 187              | 181,480                    | 170              | 187,000                    | 39         | ..         |
| Nashville.....                        | 88               | 190,100                    | 79               | 220,980                    | ..         | 37         |
| Canton.....                           | 80               | 189,750                    | 51               | 136,550                    | 39         | ..         |
| Brockton.....                         | 59               | 186,008                    | 54               | 191,775                    | ..         | 3          |
| Denver.....                           | 387              | 151,180                    | 435              | 311,010                    | ..         | 43         |
| Norfolk, Va.....                      | 67               | 180,994                    | 76               | 246,845                    | ..         | 49         |
| Winnipeg, Man.....                    | 89               | 180,075                    | 93               | 256,580                    | ..         | 41         |
| Fort Wayne.....                       | 69               | 160,000                    | 117              | 180,000                    | 1          | ..         |
| Reading.....                          | 91               | 164,250                    | 100              | 171,050                    | ..         | 4          |
| Portland, Me.....                     | 58               | 161,750                    | 24               | 57,435                     | 183        | ..         |
| Peoria.....                           | 39               | 159,175                    | 45               | 408,560                    | ..         | 01         |
| Duluth.....                           | 172              | 159,188                    | 307              | 181,961                    | ..         | 18         |
| Baltimore.....                        | 29               | 150,000                    | 15               | 266,590                    | ..         | 55         |
| Clinton Rapids.....                   | 29               | 150,000                    | 15               | 170,000                    | ..         | 11         |
| Sacramento.....                       | 123              | 148,735                    | 164              | 236,174                    | ..         | 37         |
| Dallas.....                           | 93               | 147,690                    | 234              | 607,813                    | ..         | 83         |
| Berkeley.....                         | 90               | 140,950                    | 112              | 268,500                    | ..         | 46         |
| Stockton.....                         | 62               | 140,814                    | 59               | 105,481                    | 38         | ..         |
| San Francisco.....                    | 177              | 184,878                    | 114              | 238,968                    | ..         | 1          |
| Savannah.....                         | 68               | 120,000                    | 68               | 120,000                    | ..         | ..         |
| Des Moines.....                       | 73               | 119,346                    | 51               | 275,730                    | ..         | 67         |
| Scranton.....                         | 83               | 116,974                    | 43               | 45,500                     | 140        | ..         |
| Tampa.....                            | 184              | 116,887                    | 132              | 114,855                    | 1          | ..         |
| Dayton.....                           | 74               | 112,465                    | 57               | 268,865                    | ..         | 69         |
| Washington.....                       | 107              | 108,280                    | 109              | 311,900                    | ..         | 48         |
| Spokane.....                          | 69               | 100,000                    | 109              | 100,000                    | ..         | ..         |
| San Jose.....                         | 63               | 97,971                     | 45               | 79,515                     | 34         | ..         |
| Lincoln, Neb.....                     | 46               | 97,450                     | 51               | 78,000                     | 33         | ..         |
| Elizabeth.....                        | 38               | 96,508                     | 38               | 118,279                    | ..         | 35         |
| Utica.....                            | 76               | 94,855                     | 89               | 87,735                     | 151        | ..         |
| San Diego.....                        | 120              | 94,285                     | 279              | 808,386                    | ..         | 64         |
| Springfield, Ill.....                 | 47               | 92,900                     | 21               | 78,000                     | 18         | ..         |
| Haverhill.....                        | 20               | 87,950                     | 38               | 191,760                    | ..         | 54         |
| Schenectady.....                      | 74               | 81,836                     | 34               | 182,718                    | ..         | 50         |
| Saginaw.....                          | 48               | 81,915                     | 54               | 85,095                     | 121        | ..         |
| East St. Louis, Ill.....              | 47               | 80,955                     | 67               | 86,287                     | ..         | 6          |
| Spokane.....                          | 48               | 78,500                     | 60               | 87,320                     | 37         | ..         |
| Albion.....                           | 51               | 65,100                     | 69               | 100,000                    | ..         | 55         |
| Troy.....                             | 67               | 65,106                     | 81               | 16,000                     | 301        | ..         |
| Superior.....                         | 82               | 62,925                     | 70               | 80,171                     | ..         | 16         |
| Butte.....                            | 88               | 54,840                     | 25               | 48,854                     | 0          | ..         |
| St. Joseph, Mo.....                   | 66               | 50,908                     | 70               | 44,785                     | 14         | ..         |
| Hoboken.....                          | 151              | 47,400                     | 11               | 44,000                     | ..         | 4          |
| Chicago.....                          | 121              | 45,000                     | 108              | 111,000                    | ..         | ..         |
| Bayonne.....                          | 38               | 39,747                     | 30               | 46,543                     | ..         | 18         |
| Woonsocket.....                       | 19               | 39,187                     | 24               | 35,822                     | ..         | ..         |
| Auburn.....                           | 22               | 37,905                     | 28               | 61,960                     | ..         | 56         |
| Holyoke.....                          | 20               | 34,725                     | 28               | 43,865                     | ..         | 44         |
| Colorado Springs.....                 | 27               | 32,700                     | 27               | 14,178                     | 66         | ..         |
| Pueblo.....                           | 15               | 8,980                      | 24               | 32,700                     | ..         | 73         |
| Totals .....                          | 26,751           | \$68,406,846               | 24,618           | \$78,139,420               | ..         | 12         |

There were gains in 48 and losses in 53 cities. The gain in Philadelphia was 4 per cent, Boston 4, Brooklyn 15, Detroit 21, Cincinnati 57, Pittsburgh 5, Rochester 29, Indianapolis 13, Milwaukee 35, Buffalo 25, New Haven 94, Toledo 37, Newark 100, New Bedford 26, Akron 52, Evansville 274, Huntington 226, Worcester, Mass., 1, Omaha 4, Erie 49, Lawrence 301, Passaic 350, Wilkes-Barre 481, Fort Wayne 44, Youngstown 39, Trenton 13, Canton 39, Clinton 1, and Scranton 140. The losses were not as conspicuous in March as in the preceding months. In the large cities the most significant decreases were: In New York 22 per cent, Chicago 4, St. Louis 12, Cleveland 1, St. Paul 65, Minneapolis 34, Kansas City 44, Columbus 21, Albany 64, Grand Rapids 79, Brockton 3, Denver 42, Sioux City 41, Peoria 61, Duluth 13, Cedar Rapids 11, Sacramento 37, Elizabeth 14, Schenectady 50, East St. Louis 6, Altoona 35, Superior, Wis., 16, and Pueblo 75.

Construction was retarded in the South, but the losses will be more than made up with the returns from the cotton crop. There were losses in Washington of 54 per cent, Baltimore 4, Louisville 21, Memphis 7, Richmond 47, Atlanta 52, New Orleans 15, Nashville 17, Norfolk 48, Birmingham 35, Savannah 32, and Chattanooga 63.

The Pacific coast cities for the most part show a falling off with few exceptions. There were losses in San Francisco of 64 per cent, Oakland 20, Sacramento 37, Berkeley 46, Los Angeles 48, San Diego 64, and Portland, Ore., 43; in San Jose there was an increase of 24 per cent, Stockton 33, Spokane 19, and Tacoma 39.

## MILWAUKEE HAS BUILDING GAIN.

Milwaukee, Wis., April 19.—Milwaukee building supply men are in a more optimistic frame of mind than they have been in months, as a result of the increased activity in the local building field. Figures prepared by W. D. Harper, Milwaukee building inspector, show that during the month of March there were 420 permits granted for structures to cost \$942,921, as compared with 363 permits and a building investment of \$696,183 during the month of March, 1914. This represented an increase of \$246,738 and, it is also interesting to note, that March was the first month in nearly a year that building operations showed a gain. In a conservative estimate, recently made by Building Inspector Harper, he predicted that \$12,463,000 would be spent in building work in this city during 1915. Building material dealers say that the spring revival in business is already under way and they are confident that this season's trade will show an increase over that of a year ago.

The Arpin Lumber Co., of Grand Rapids, Wis., has opened branch yards at Tony, Wis., with Joseph Christman in charge. A general line of building material will be carried.

## SOUTHERN PROSPECTS BRIGHT.

Jacksonville, Fla., April 19.—"Business in the building material line has commenced to pick up considerably in this locality and present indications are that business will steadily increase during the next few months." This is the undivided opinion of officials of the Composite Brick Co. of Jacksonville, Fla. The city recently voted \$1,000,000 for the construction of schools and plans for the erection of these new buildings are now under way.

R. L. Galloway and J. A. Lyon, of Falmouth, Ky., have formed a partnership to handle building material, feed, lime, coal and other supplies. Mr. Galloway is also in the milling business.

## Small Jobs Offer Greatest Market.

Cincinnati, O., April 19.—In the absence of anything else big, or, at least, as big, the courthouse job still occupies the attention of local building material men, especially in view of the fact that much of the business in connection with it is still to be handed out. Some part of the delay in awarding subcontracts, both for labor and material, is due to threats of an injunction proceeding by local concerns, based on allegations that the specifications on which the general contract was let to the Charles McCaul Co. were so indefinite as to render the letting illegal. The county prosecutor was formally requested to bring such a suit, but refused to do so, and private parties then took steps to litigate the matter. It is generally believed, however, that inasmuch as no action was taken until the contractor had expended a considerable amount on the beginning of the work, the court will be inclined to refuse the application for an injunction, and to let the work proceed.

Messrs. Pursell and Grand, comprising the officers of the Pursell-Grand Co., one of the leading material concerns of Cincinnati, were in Bloomington, Ind., last week, visiting the plant of the Bloomington Brick Co.

Walter S. McCammon, of L. H. McCammon Bros., states that the business of the concern is moving along at about a normal level for the season, being up to that of last year, although things are a little "draggy." The firm has a number of small jobs on hand, enough to keep things going at a good rate, pending the opening up of the season in full blast, which is expected to take place before long.

The Moores-Coney Co., like most of the local building supply concerns, finds that there is a fair number of relatively small jobs on hand and in prospect, but comparatively little new work involving any large amount of material. The company has recently added several lines of brick to its department devoted to that important branch of the material field, and now has one of the most complete and varied offerings of brick which can be found anywhere.

George Rinkenberger, of the Brick Sales Co., reports a fair business, but nothing extraordinary, in which respect he resembles the rest of the trade. The display room of the Brick Sales Co., which has been for some time in course of construction, so to speak, is now about completed to the satisfaction of Mr. Rinkenberger, and compares very favorably with the larger displays in the city.

## Louisville Business Good.

Louisville, Ky., April 19.—Fine weather has started the building season in Louisville, and business with the supply houses is exceptionally good just now.

L. M. Parsons, of the Tyler Building Supply Co., said that March closed as a banner month with the company and from present indications April will make the same kind of a showing. Most of the business being handled consists of orders for high grade face brick, but other lines are also moving. The concern is contemplating the addition of lime, cement and other lines of building supplies not carried at this time.

H. H. Frazer, manager of the building supply department of the R. B. Tyler Co., said that while he was not getting any big orders just now, he was getting his share of the smaller orders being placed and was very well satisfied. He is furnishing the brick for a substantial number of residences under construction.

E. P. Teague, sales manager of the Union Cement & Lime Co., has moved the company's front office to the rear of the building and has utilized the space at the Main street entrance of the building as a display room for showing brick and other

builders' supplies. Handsome exhibits have been erected and the paneled brick displays are now all in place. Business with the company has been excellent, but has fallen off slightly during the latter part of the month. Lime and cement are moving very well just now. The company does not push lime for commercial or agricultural purposes to any extent, but goes chiefly after the building trades.

## Western Canada Conditions

Winnipeg, Man., April 20.—Conditions continue to improve in Western Canada. Reports from different centres show a marked improvement in the building industry. March building permits indicate this more than all the writing can do.

Several of the Builders' Exchanges in Western Canada have been advocating a "Build Now" policy. At Brandon, Man., it was made clear that a considerable amount of building would be done this year provided sufficient inducement could be offered in the way of lower cost of construction, but that without this, there would not be very much done this year.

Wages of the different trades have come in for revision in almost every city in Canada this season. The general scale in force at the present time is:

|                   |                                  |
|-------------------|----------------------------------|
| Bricklayers.....  | 55c per hour                     |
| Plasterers.....   | 50c per hour or 11 1/4c per yard |
| Carpenters.....   | 40c per hour                     |
| Laborers.....     | 20c per hour                     |
| Lathers.....      | 3 1/2c per yard                  |
| Plumbers.....     | 50c per hour                     |
| Steamfitters..... | 45c per hour                     |
| Electricians..... | 35c per hour                     |
| Tinsmiths.....    | 30c to 40c per hour              |
| Painters.....     | 25c to 35c per hour              |

It is expected that the Dominion and Provincial governments will proceed with the various works for which appropriations were made earlier this year. This will stimulate the building supply trade, which at the present time is very inactive, although there are signs that it is picking up.

In Winnipeg work is shortly to be started on two large blocks, one of which will cost in the neighborhood of \$1,000,000. Foundations will go in for a twenty-story building, but at the present time only a five-story block will be built. When completed this structure will be the largest in Western Canada. This block is being built because of the "Build Now" campaign which has been launched by the various builders' exchanges and daily papers throughout the West. It is estimated that the owner will save at least 40 per cent over the cost of last year.

Owing to the season not being opened up yet, it is rather too early to go minutely into the state of the market situation. It is expected that everything will be moving nicely in about a month's time. At the present time, it suffices to mention that in all the various commodities of building supply lines, everything is extremely quiet, with a strengthening market, prices keeping a fairly strong front.

## PROSPECTS BRIGHT IN KANSAS CITY.

Kansas City, April 19.—Business is very quiet at present in Kansas City, but the uniform belief is that spring will show much increased activity in the building line.

According to W. M. Rynerson, of the Builders' Material Supply Co., "many millions of dollars are piling into this section of the country from the bountiful crops and live stock now being marketed. We naturally expect this will result in greatly increased building activities. Another thing we think will help is the decision of the Interstate Commerce Commission regarding the railroad rate increase. I believe the railroads have been pounded long enough. They are the second industry of importance in this country, being ranked only by agriculture."

## Boston Construction Heavy.

Boston, Mass., April 19.—Building supply handlers of Boston are more than satisfied with the present condition of business. Spring work came out in satisfactory volume and with the labor market removed from the anticipation of any extraordinary demands all indications point to a building season without interruption. Early spring campaigning has settled down to the routine deliveries of materials and the ordinary course of business. Some of the houses regard the situation as close to normal as could be expected under the complex conditions of the business world.

Of \$34,000,000 in New England building contracts reported since the first of the year, Boston bulks heavily, but may be surpassed proportionally by Salem with its rebuilding necessities. Salem had more than 1,800 buildings destroyed in the fire of June 5, 1914. Already permits for 461 buildings valued at \$3,577,152 have been issued and work started. This building work is divided as follows: First-class construction (absolutely fireproof), comprising mills and factories, \$1,312,500; second-class, hotels, lodging houses, etc., \$324,585; third class, tenement houses, \$345,300; fourth-class, dwellings, one and two family houses, \$1,215,117; fifth-class, store blocks with dwellings overhead, \$363,050; sixth-class, buildings of mills construction, \$16,600. When it is considered that the real estate loss in the fire was estimated at \$5,500,000, according to the taxable valuation at the time, the new building work in the city to date is a strong evidence of the city's rapid recovery.

There were 30 building permits issued in Haverhill, Mass., during last month, totaling in value \$87,250, or more than 400 per cent increase over last year, when the March building permits totaled in value but \$18,200.

R. E. Griffith, of Philadelphia, vice president of the Giant Portland Cement Co., last week visited the local office, of which the new manager is J. R. Sullivan.

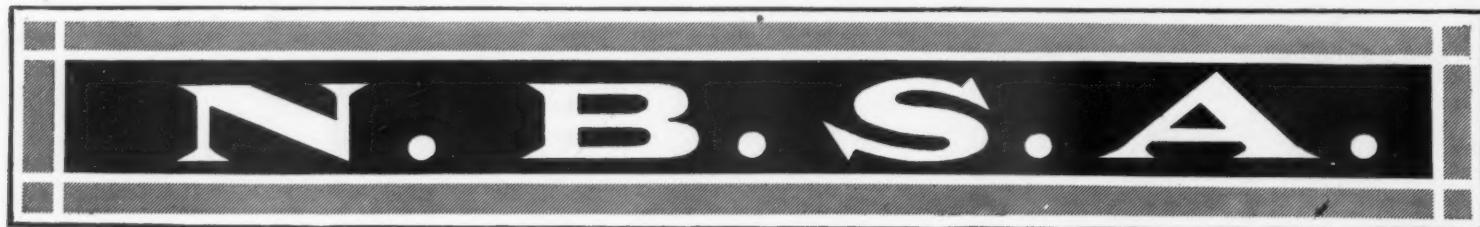
Waldo Bros. have been enjoying a fine share of business. James C. Lincoln, of that house, says that trade is moving satisfactorily and that many of the lines may be regarded as normal for the season of the year.

Much interest is being shown by building material men of Massachusetts in the House Bill No. 1750, the provisions of which would make uniform the code governing the use of building materials. The committee on mercantile affairs is considering the bill and hearings before this body are expected to bring to the state house large representations of property owners, builders, architects, contractors and building material dealers. The Massachusetts Real Estate Exchange is conducting a campaign for the purpose of securing the opinions of its members on the proposed bill. The exchange has compiled a digest of the proposed law which points out that the bill is applicable to every city and town in the commonwealth and to the construction, alteration, removal, repairs, equipment, occupation, height, area, location and maintenance of all structures except Federal buildings, bridges and wharfs.

It is provided that no building shall be higher than 125 feet except parapets and other ornamental features. There shall be but one habitable story in the building for each 10 feet in street width. The height of buildings in Boston is not affected by the proposed act.

Building material dealers of the state should make it a point to attend hearings of the bill before the Committee on Mercantile Affairs so that their interests will receive ample consideration and safe building construction laws be passed.

The Lexington Builders' Supply Co., of Lexington, Ky., has sold its plumbing and heating departments to J. J. Fitzgerald, a well-known plumber of the Bluegrass city.



## Co-operation, as Well as Competition, Life of Trade

The opinion of many during the past has been that competition alone is the one thing necessary to stimulate activity in all forms of trade and to make it profitable for those who are engaged in business. Such persons have consistently fought any movement that had for its object the alteration of this plan of action.

We all know and realize, however, that this world of ours is growing larger every day, and with this growth there has come to light the utter helplessness we are left in by the guidance of such an axiom. As, for instance, we are now witnesses of a spectacle that is embroiling practically all of Europe, and search where we may, everyone who has offered any solution for the cause of this present trouble has almost in every instance attributed it more or less to the unrestrained competition between these warring nations for material things. In other words, it is a fight for the temporary advantage.

It is well, therefore, that we see in this country a growing tendency to adopt the slogan "Co-operation as Well as Competition," and better still to find its influences creeping into the activities of the building material business. Every day we hear of local associations cropping up in our midst, and as a rule they are formed for higher purposes than the mere temporary gain which has been sought in such actions before; we find if the trouble is taken to dig into their real workings, that they have been organized for the purpose of carrying on a campaign of co-operation with the public.

It may sound strange to a great many to think that the public is or should be considered in such matters, but all progressive merchants of today realize that without this assistance little can be done towards benefiting the welfare of the public. A more careful analysis of the facts will reveal the truth of this statement. What are the things that are helping to keep business down?

The first and foremost is what is commonly known as cut-throat prices; in other words, the "competition that kills." Well, knowing this, what are the business men of the country doing towards remedying the evil? We find that they have presented to the Congress of this nation, a measure known as "The Stevens Bill," regarding which these columns spoke at length in our last issue. Present indications are that if passed it will serve to eventually eliminate this condition. Several years ago if a proposition of the kind as incorporated in this bill was broached by anyone, it would have been tabooed, but we now find these very same people to be its strongest supporters.

Another very important adjunct to any well regulated business is a careful guarding of its credits; and this is probably the most important feature in the conduct of the building material business. Because of its very nature, the material man has to rely on something more than the mere knowledge he may gain as to the financial ability of his customer, and it is almost absolutely necessary that the material dealer of today should be fortified by the protection of a credit bureau. These credit agencies have never yet failed to perform their purpose well, and the longer they are fostered and preserved, the less reliance will we find placed in a lien law that never pays 100 per cent and is really devised to protect a man from his own shortcomings.

One of the greatest assets that a credit bureau brings to any organization is the opportunity it eventually gives for the promotion of the interests which it serves. By this is meant, of course, that more closely guarded credit means bigger profits, not in the sense of increased prices so much as increased collections, and there is then the incentive to spend a portion of this increase in the promotion of one's business.

The National Builders' Supply Association has been advocating for sometime past the use of the "Credit Bureau and Promotion Plan" as a basis for local organization and it has seen wonderful results.

Another very important feature of modern business has been the adoption of a thorough and systematic method of cost finding. It is hard to believe that anyone will sell goods at a price when it is known that such price will not bring a fair return of profit; but, nevertheless, it is a fact that low prices can in a good many instances be traced to a lack of knowledge on this very important subject. The N. B. S. A. gave this matter of cost finding considerable study in the past year, and it was given a prominent place on the program at the last convention. The gentleman who had the subject in hand impressed his audience with the fact that he knew what he was talking about, and the association has just completed the reproduction of his remarks and will distribute them in pamphlet form to the members at an early date.

Summing up, therefore, what has been said above we find these three principles. The building material man should organize for the purpose of taking an active and intelligent interest in matters of legislation that relate to business; to protect his business from those who would use his capital to their own gain and his loss, and, lastly, to place his interests on a plane where he would know exactly how he was conducting his business and with what results.

### ERROR IN LINEUP.

During these days of confusion in the baseball world, quite frequently errors are made in the lineup of the players. Naturally with increased activity, due to the spring season, an error is liable to occur in the lineup of building material dealers. As an example of the way discrepancies creep in, the April 7 issue had W. L. Clippard connected with the Fort Smith Terminal Warehouse Co. The two concerns are in the state of Arkansas but Mr. Clippard is located at Little Rock, while the Fort Smith Terminal Warehouse Co. is doing business at Fort Smith.

Mr. Clippard, who is vice president of the N. B. S. A. for Arkansas, entered the building material business at Little Rock in 1911, having been connected previously with a local hardware concern. His business is confined principally to building specialties, such as metal lath, coal chutes, products of Samuel Cabot, Inc., and other fireproofing materials. He is favorably located with a warehouse near the heart of the city with ample track facilities, and carries a large stock of materials always on hand. Buying in carload quantities, Mr. Clippard operates over the entire state of Arkansas. He states that build-

ing conditions are very encouraging and prospects exceedingly bright.

The Fort Smith Terminal Warehouse Co., with offices in the First National Bank building of Fort Smith, are large wholesalers and retailers of building materials, having a warehouse capacity of 200 carloads. They carry a complete line of building materials and specialties. H. C. Pratt is president of the company and a new member of the National Builders' Supply Association.

### N. B. S. A. NOTES.

Field Secretary Edward A. Foster was heard from last week. At that time he was in San Francisco and reported that it was hard work to arouse much interest along the coast in anything but the Panama-Pacific Exposition.

N. H. Parsons of Rockford, Ill., who is a member of the Board of Directors, was a caller at association headquarters during the week. Mr. Parsons has proven to be a very active and energetic worker in the interests of the National, and makes it a point to drop in and see how things are moving whenever he is in Chicago.

### "AD" CLUBS TO GATHER 10,000 BUSINESS MEN.

It is expected that over 10,000 business men will attend the eleventh annual convention of the Associated Advertising Clubs of the World which will be held in Chicago June 20 to 24.

To accommodate this crowd the convention will be held in the Auditorium Theater, while the various departmental meetings, such as retail advertisers, general advertisers, newspapers, business papers, magazines, etc., will be held in the Auditorium Hotel and Annex on the lake front.

The program committee is making every effort to get the best men in their line to address these departmental meetings, so that those attending them may have an opportunity of becoming acquainted with methods and policies which have proven most successful. Steps have also been taken to encourage informative addresses, and it is expected that these departmental meetings will prove to be gigantic experience meetings of a kind never before attempted.

In addition to the business side of the convention an unusual program has been prepared in the way of entertainment. A street pageant which will take two hours to pass a given point will be held Monday evening. On Tuesday and Wednesday evenings an advertising show will be staged at the Auditorium Theater. There will be lake excursions, auto trips for the ladies, and a dozen other worthwhile features of that kind. It is expected that President Wilson or some other nationally prominent man will deliver the opening address.

Washington, D. C., April 22.—(Special.)—The Interstate Commerce Commission heard final arguments today on the question as to whether carriers in official classification territory shall make an additional charge for "spotting" cars. This is one of the many ramifications of the advanced rate case.

George Stuart Patterson, representing the railroads, confessed that the charges assessed could not be justified in their present form. He said the commission, shippers, and carriers should work out a solution.

## You Know

it's the easiest thing in the world to buy a mixer—but it's not always so easy to operate economically after you have it.

But if you buy a Jaeger Mixer, you are assured of satisfaction and economy. Made of strong, durable materials; with nine years of "mixer" experience built into it, and with a long list of satisfied customers, it is the best value on the mixer market today.



For Concrete, Mortar or Plaster  
Four sizes, fourteen different outfits

### The Jaeger Machine Co.

219 W. Rich St.  
COLUMBUS, O.

Dealers  
should add  
it to their  
line

(See our  
Panama  
American  
Exposition  
Exhibit)



### THE Standard Brands

OF  
Portland Cement  
Lightest in Color  
Highest Tensile Strength

#### ALWAYS UNIFORM

Always the same high quality. Prompt shipment guaranteed at all times and made possible, as each mill is located within switching limits of the two greatest railroad centers of the West. You are assured of your orders being promptly filled.



SALES OFFICE:  
1010 Republic Bldg., Kansas City

MANUFACTURED BY

### Union Sand & Material Co.

ST. LOUIS  
Liggett Bldg.

KANSAS CITY  
1010 Republic Bldg.

MEMPHIS  
Tenn. Trust Bldg.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

## Hercules Red Strand Wire Rope

YOUR operating expenses depend largely upon the equipment you use. Inferior material not only gives inferior service, but it also causes expensive delays, shut-downs, and possible accidents.

Hercules Wire Rope is made from the best material obtainable, and its high quality is absolutely assured by the minute care used in selecting the wire; and by the exacting tests and inspections made during and after its manufacture.

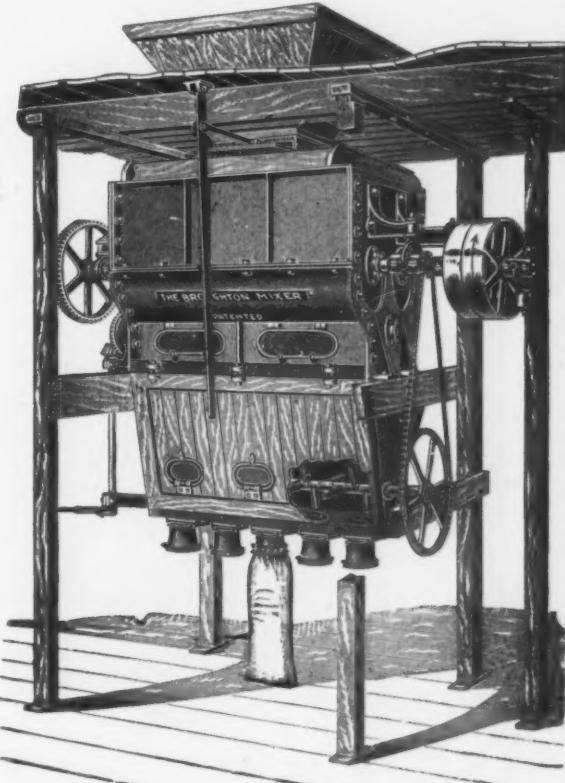
*We would be glad to have you write us about your Wire Rope problems.*

Established in 1857

### A. LESCHEN & SONS ROPE COMPANY

St. Louis, Missouri

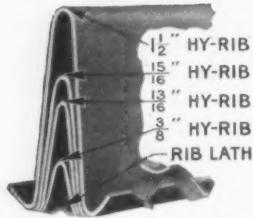
Branches:  
New York, Chicago, Denver  
Salt Lake City  
San Francisco



The most thorough and efficient  
Mixers of Plaster, Cement and  
Dry Materials. Send for Circular.

**W. D. DUNNING, Water St., Syracuse, N. Y.**

Following is one of the full page advertisements appearing in leading architectural, engineering and contracting publications.



*It's the Strength of the Ribs That Counts*

### The Complete Line

1½" Hy-Rib in 3 gauges.  
15/16" Hy-Rib in 4 gauges.  
13 16" Hy-Rib in 3 gauges.  
¾" Hy-Rib Lath in 3 gauges.  
Beaded Plate Rib Lath in 3 gauges.  
Standard Rib Lath in 3 gauges.  
B Rib Lath in 3 gauges.  
Detroit Diamond Lath in 4 gauges.  
Pressed Steel Channels in 4 sizes.  
Hy-Rib Hollow Studs in 3 sizes.  
Corner Beads in 4 types.  
Metal Base Screeds of 4 types.

# HY-RIB *and* RIB-LATH

## THE COMPLETE LINE OF GREATEST POPULAR DEMAND

Ask any man in the building line the name of the best known and most widely advertised Metal Laths and Reinforcements.

The answer will be Hy-Rib, Rib Lath and Trussed Concrete Steel Company. Owners ask for them, architects specify them and contractors want them. You make friends by handling Hy-Rib and Rib Lath—products that are half sold before they are delivered. We have everything in the line of Metal Lath, Steel Studs, Concrete Reinforcement, etc.

### SECURE OUR QUOTATIONS

Before you buy a dollar's worth of Metal Lath, secure our prices, samples, etc.

*We Want to Show You*

**Trussed Concrete Steel Co.**  
Albert Street, Youngstown, Ohio



**THE THREW SHOVEL**

**800 Yards Gravel In 10 Hours—Shovel Operating  $\frac{2}{3}$  Time**

Williamsport, Ind.,

The Thew Automatic Shovel Co.,  
Lorain, Ohio.

Gentlemen: In reply to your favor of February 6, will say that the largest day's loading that we have done with the No. 3 shovel was 800 yards of gravel in ten hours, the shovel being in operation about two-thirds of the time, the engine being operated by one man doing his own firing. We believe that this is about the maximum capacity when the engine is operated by one man, but by employing a fireman 1,200 to 1,500 yards could be loaded in a ten-hour day.

Very truly yours,  
WM. B. CARMICHAEL CO.

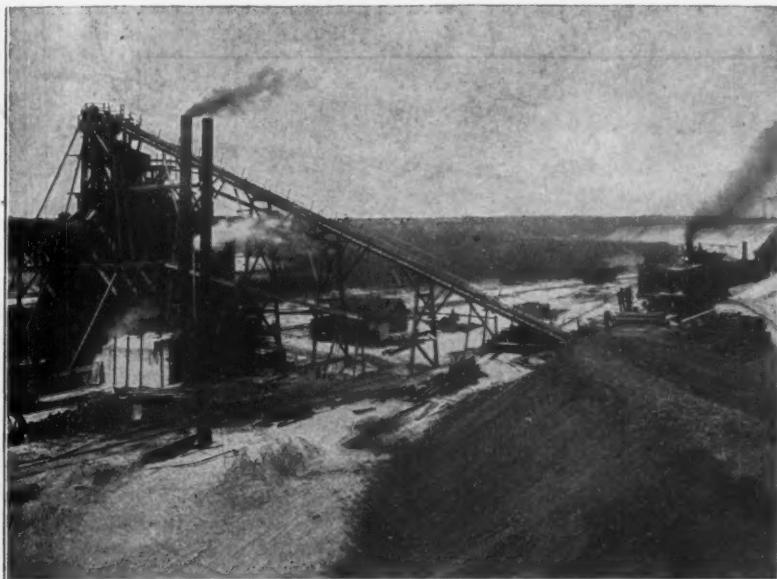
**WRITE FOR BOOKLET "O"**

**THE THREW AUTOMATIC SHOVEL CO. LORAIN, O**



Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

## Maximum Production of Washed Gravel at Minimum Cost With "S-A" Gravel Washing Plants



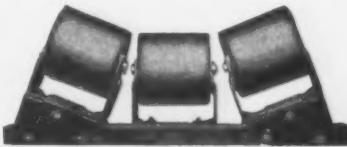
The above cut shows one of the many "S-A" profitable plants erected in Wisconsin with a capacity of 2,000 yards a day.

This fact has been established by the financial success of over 300 Sand and Gravel Plants, all designed and manufactured by the Stephens-Adamson Mfg. Co.

The reason for this continued success has been the careful study of gravel production by the "S-A" Engineering Board and the advanced—"ahead of the rest"—mechanical devices comprising the equipment.

### TWO NECESSARY FACTORS IN A WELL EQUIPPED PLANT

**The Unit Carrier**  
Saves the Belt  
Saves Attention  
Reduces Power  
Indestructible



**The Gilbert Screen**  
Large Capacity  
Clean Separation  
Installation Cost Low  
Minimum Power Required



**STEPHENS-ADAMSON MFG. CO.**  
AURORA, ILLINOIS

NEW YORK CHICAGO PITTSBURGH BOSTON ST. LOUIS  
DETROIT SALT LAKE CITY LOS ANGELES HUNTINGTON TORONTO

We design and manufacture conveying machinery for rock crushing plants, gravel washing plants, storage systems, etc. Also transmission and screening equipment, elevators, gates, feeders, car pullers.

WRITE US FOR PRICES ON

# PAPER BAGS

for

Lime, Cement, Plaster, Ground Stone, Fertilizer, Etc.

The Urschel-Bates Valve Bag Company  
Toledo, Ohio

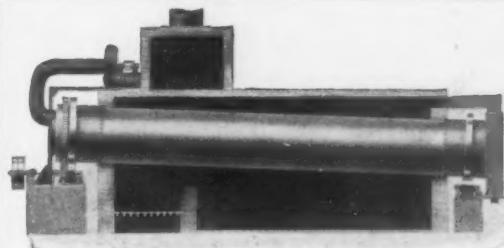
[Address all communications to the company at Toledo, Ohio.]

BRANCH FACTORIES: Niagara Falls, Ontario, Can., Pittsburgh, Penn.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

We make the largest variety of  
**MECHANICAL DRYERS**

Write for  
Catalog  
No. 16



We are also Engineers and Manufacturers of  
Car Hauls  
Crushers and Pulverizers  
Drop Forged Chain  
Elevators and Conveyors  
Soft Mud Brick Machinery

Feeders  
Mining Machinery  
Mixing Machinery  
Sand Plants  
Screens

THE C. O. BARTLETT & SNOW CO., Cleveland, Ohio



**S A M E**  
**Maumee Compound**

For water-proofing cement  
but a new price

**4c Per  
Pound**

**The Maumee Chemical Co.**  
PORT CLINTON, OHIO  
Formerly — TOLEDO, OHIO

New Gravel Washing Plant of Reinert Bros. (shown below), located at Algonquin, Ills., equipped with

**"REXALL"**

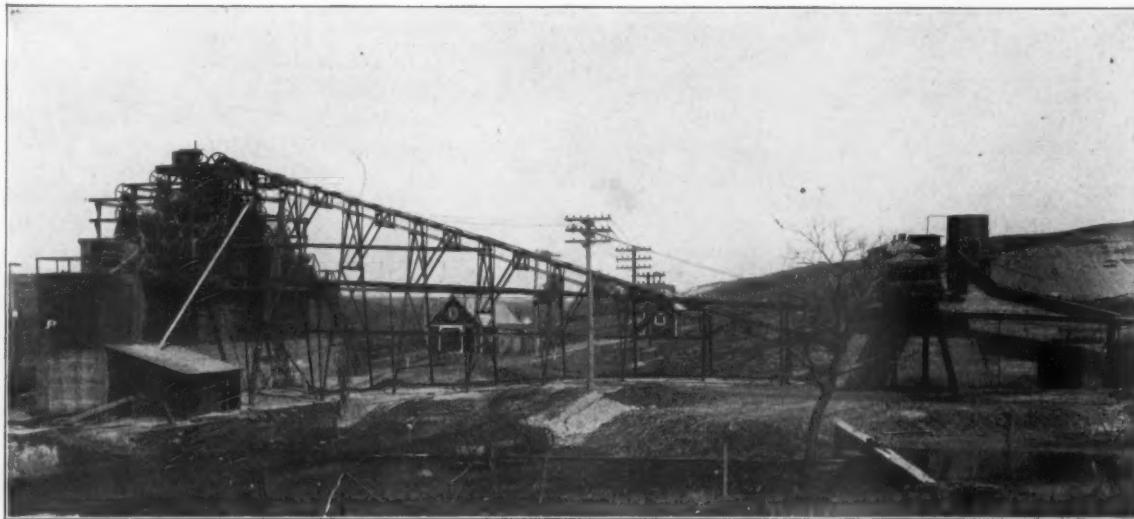
DOUBLE STITCHED CONVEYOR BELTING

THE REASON  
WHY ➤

Four years service given at former plant of this company at South Elgin, Ills., equipped with 30"

**"REXALL"**

DOUBLE STITCHED CONVEYOR BELTING



MANUFACTURED BY

**IMPERIAL BELTING CO. CHICAGO**

(Advertisements Like This One Makes the North Western Line Easy to Sell)

**CHANNEL LATH**

**Kno-Burn**

These  
4 Brands  
of Lath  
Come in  
56 Styles

**Kno-Fit**

**XX Century**

**One Account Means  
Less Book-keeping**

And that cuts down your overhead and puts more money on the profit side of the ledger.

Our 4 brands of lath cover the field completely. Our National advertising has educated the public to their merits. We can ship promptly from our nearest distributing point. Our prices are always in line with the quality of the product.

All the North Western brands are made with the famous "Kno-Burn" mesh that imbeds itself in the plaster for absolute permanence. They have survived the most severe tests for fireproof quality. They are easy to apply and easy to plaster over.

Let us send you literature and prices today.

Act now and be ready for Spring business.

**North Western Expanded Metal Co.**  
929 OLD COLONY BLDG., CHICAGO, ILL.



# CONCRETE

## Congress Provides for Much Concrete

The manner in which the appropriation of \$30,000 authorized by Congress in the River and Harbor bill, passed at the last session, is to be used, has been definitely decided by the engineers in charge of the work. Four million dollars will be turned over to the Mississippi river commission and \$500,000 has been set aside for surveys, examinations, etc., while \$3,241,522 has been reserved as an emergency fund to care for contingencies which might arise. The balance of the appropriation will be used for the following improvements, a big factor in which will be the use of concrete:

### NEW ENGLAND.

|   |           |
|---|-----------|
| St. Croix River, Maine                  | \$ 50,000 |
| Portland, Me.                           | 105,000   |
| Boston, Mass.                           | 135,769   |
| New Bedford and Fairhaven, Mass.        | 56,610    |
| Fall River, Mass.                       | 12,000    |
| Harbor of Refuge at Point Judith, R. I. | 75,000    |
| Pawcatuk River, Connecticut             | 1,000     |
| Thames River, Connecticut               | 14,500    |
| Connecticut River, below Hartford       | 30,000    |
| Branford, Conn.                         | 4,000     |
| Housatonic River, Connecticut           | 6,000     |

### NEW YORK, NEW JERSEY, PENNSYLVANIA, DELAWARE AND MARYLAND.

|   |           |
|---|-----------|
| Port Chester, N. Y.                       | \$ 10,000 |
| Mamaroneck, N. Y.                         | 14,800    |
| East Chester Creek, N. Y.                 | 5,000     |
| Bronx River, N. Y.                        | 100,000   |
| Harlem River, N. Y.                       | 75,000    |
| Plattsburgh, N. Y.                        | 2,000     |
| Narrows of Lake Champlain, N. Y., and Vt. | 3,000     |
| Hudson River, N. Y.                       | 877,780   |

(In addition to this there has been allotted by separate act \$622,220, thus making available for Hudson River a total of \$1,500,000.)

|   |           |
|---|-----------|
| Rondout, N. Y.  | 3,000     |
| Tarrytown, N. Y.  | 125,000   |
| Channel in Gowanus Bay, N. Y., and Bay Ridge and Red Hook Channels  | 15,000    |
| Newton Creek, N. Y.   | 5,000     |
| Great South Bay, N. Y.  | 20,000    |
| Brown's Creek, N. Y.  | 2,000     |
| Sheepshead Bay, N. Y.   | 2,000     |
| Huntington, N. Y.   | 5,000     |
| Arthur Kill or Staten Island Sound, N. Y., and N. J.  | 400,000   |
| Passaic River, N. J.  | 100,000   |
| Shrewsbury River, N. J.   | 18,000    |
| Raritan Bay, N. J.  | 20,000    |
| Keypoint Harbor, Matawan Creek, Raritan, South and Elizabeth Rivers, Shoal Harbor and Compton Creek and Chesapeake Creek, N. J.                                   | 1,000,000 |
| Woodbridge Creek, N. J.   | 6,000     |
| Delaware River, Pa., and N. J., above Labor street, Trenton, N. J.  | 6,612     |
| Delaware River, Pa., and N. J., from Philadelphia to the sea  | 45,000    |
| Wilmington, Del.  | 60,000    |
| Absecon Inlet, N. J.  | 5,000     |
| Raccoon Creek, N. J.  | 15,000    |
| Appoquinimink, Murderkill and Mispillion Rivers, Del.   | 1,000     |
| Inland waterway between Rehoboth Bay and Delaware Bay, Del.   | 5,000     |
| Broadkill River, Del.   | 5,000     |
| Tuckerton Creek, N. J.  | 1,000     |
| Inland waterway, Chincoteague Bay, Va., to Delaware Bay, Del.   | 5,000     |
| Elk and Little Elk Rivers, Md.  | 35,800    |
| Harbors at Rockhall, Queenstown, Claiborne and Cambridge and Chester, Choptank, Warwick, Pocomoke, La Trappe, Wicomico and Manokin Rivers, and Tyaskin Creek, Md. | 4,800     |
| Corsica River, Md.  | 20,000    |
| Potomac River at Washington, D. C.  |           |

### VIRGINIA, NORTH CAROLINA AND SOUTH CAROLINA.

|  |          |
|--|----------|
| York, Mattaponi and Pamunkey Rivers, Va.   | \$ 5,000 |
| Rappahannock River, Va.  | 8,000    |
| James River, Va.   | 50,000   |
| Pagan River, Va.   | 2,000    |
| Appomattox River, Va.  | 5,000    |
| Waterway from Norfolk, Va., to Sounds of North Carolina  | 400,000  |
| Waterway from Pamlico Sound to Beaufort Inlet, N. C.   | 2,900    |
| Scuppernong River, N. C.   | 2,000    |
| Shallow Bag Bay, N. C.   | 1,000    |
| Fishing Creek, N. C.   | 1,000    |
| Pamlico and Tar Rivers, N. C.  | 35,800   |
| Bay River, N. C.   | 1,000    |
| Contentnea Creek, N. C.  | 1,400    |
| Smith's Creek, N. C.   | 22,500   |
| Neuse and Trent Rivers, N. C.  | 9,000    |
| Waterway from Pamlico Sound to Beaufort Inlet, N. C.   | 17,000   |
| Beaufort, N. C.  | 2,000    |
| Waterway connecting Core Sound and Beaufort Harbor, N. C.  | 3,800    |
| Morehead City, N. C.   | 2,000    |
| New River, N. C., including inland waterways between Beaufort Harbor and New River and between New River and Swansboro | 37,300   |
| Cape Fear River above Wilmington, N. C. (locks and dams)   | 173,000  |
| Cape Fear River at and below Wilmington, N. C.   | 150,000  |

### MISSISSIPPI RIVER AND TRIBUTARIES.

|   |            |
|---|------------|
| Mississippi River, between mouths of Ohio and Missouri Rivers | \$ 300,000 |
| Mouth of Missouri River to Minneapolis, Minn.                 | 1,000,000  |
| St. Paul to Minneapolis, Minn.                                | 65,000     |
| Brainerd to Grand Rapids, Minn.                               | 6,000      |
| Waukegan, Ill.  | 2,000      |
| Zippel Bay, Lake of the Woods, Minn.                          | 1,000      |
| Missouri River, Kansas City to mouth                          | 1,000,000  |
| Kansas City to Sioux City                                     | 50,000     |
| Sioux City to Fort Benton                                     | 50,000     |

|   |         |
|---|---------|
| Osage River, Mo.  | 7,500   |
| Gasconade River, Mo.                                    | 15,000  |
| Cumberland River, below Nashville, Tenn.                | 378,000 |
| Tennessee River, Tenn., Ala. and Ky., above Chattanooga | 150,000 |
| Between Florence and Riverton, Ala.                     | 100,000 |
| Below Riverton, Ala.                                    | 251,000 |
| French Broad River, Tenn.                               | 30,000  |

### MIDDLE WESTERN STATES.

|   |            |
|---|------------|
| Monongahela River, Pa.  | \$ 211,200 |
| Pittsburgh Harbor, Pa.  | 7,500      |
| Ohio River, open channel work   | 310,000    |
| Locks and dams  | 3,330,000  |
| Ashland, Wis.   | 15,000     |
| Harbor of Refuge, Keweenaw Point, Mich.   | 50,000     |
| Ontonagon, Mich.  | 8,000      |
| Harbor of Refuge, Grand Marais, Mich.   | 10,000     |
| Menominee Harbor and River, Mich. and Wis.  | 7,500      |
| Two Rivers, Wis.  | 12,000     |
| Port Washington, Wis.   | 5,000      |
| Milwaukee, Wis.   | 15,000     |
| Racine, Wis.  | 150,000    |
| Kenosha, Wis.   | 25,000     |
| Waukegan, Ill.  | 10,000     |
| Fox River, Wis.   | 20,000     |
| Chicago, Ill.   | 500,000    |
| Chicago River, Ill.   | 20,000     |
| Calumet, Ill.   | 18,000     |
| Calumet River, Ill. and Ind.  | 22,000     |
| Indiana, Ind.   | 150,000    |
| Illinois River, Ill.  | 50,000     |
| St. Joseph, Mich.   | 15,000     |
| South Haven, Mich.  | 8,300      |
| Saugatuck, Mich.  | 3,500      |
| Arcadia, Mich.  | 3,000      |
| Holland, Mich.  | 3,600      |
| Grand Haven, Mich.  | 30,000     |
| Grand River, Mich.  | 4,200      |
| Muskegon, Mich.   | 9,500      |
| Ludington, Mich.  | 9,300      |
| Frankfort, Mich.  | 3,400      |
| Charlevoix, Mich.   | 2,700      |
| Ship channel connecting waters of Great Lakes between Chicago, Duluth and Buffalo | 20,000     |
| Black River, Mich., at Port Huron   | 5,000      |
| Alpena, Mich.   | 5,000      |
| Harbor Refuge, Harbor Beach, Mich.  | 200,000    |
| St. Marys River, Mich. (fourth lock)  | 1,006,000  |
| Toledo, O.  | 35,000     |
| Sandusky, O.  | 5,000      |
| Huron, O.   | 3,000      |
| Cleveland, O.   | 92,000     |
| Conneaut, O.  | 195,000    |
| Erie, Pa.   | 30,000     |
| Buffalo, N. Y.  | 187,373    |
| Charlotte, N. Y.  | 12,000     |
| Lake Erie entrance to Black Rock Harbor and Erie Basin, N. Y.                     | 10,000     |
| Oswego, N. Y.   | 100,000    |

### PACIFIC COAST.

|  |           |
|--|-----------|
| Los Angeles, Cal.  | \$ 75,000 |
| San Francisco, Cal.  | 12,000    |
| Oakland, Cal.  | 80,000    |
| San Pablo Bay, Cal.  | 15,000    |
| Humboldt Harbor and Bay, Cal.  | 300,000   |
| Petaluma Creek and Napa River, Cal.  | 15,000    |
| Sacramento and Feather Rivers, Cal.  | 60,000    |
| Coquille River, Ore.   | 76,000    |
| Coos Bay, Ore.   | 70,000    |
| Coos River, Ore.   | 3,000     |
| Suislaw River, Ore.  | 117,500   |
| Yachina River, Ore.  | 3,000     |
| Nehalem Bay, Ore.  | 116,175   |
| Snake River, Ore., Wash. and Ida.  | 20,000    |
| Upper Columbia River above Celilo Falls to mouth of Snake River, Ore., and Wash. | 37,000    |
| Mouth of Columbia River, Ore., and Wash.   | 1,500,000 |
| Columbia and Lower Willamette Rivers, below Portland, Ore.                       | 450,000   |
| Willamette and Yamhill Rivers, above Portland, Ore.                              | 25,000    |
| Cowlitz and Lewis Rivers, Wash.  | 15,000    |
| Clatskanie River, Ore.   | 1,000     |
| Grays Harbor and Bar, Wash.  | 460,000   |
| Waterway connecting Port Townsend Bay and Oak Bay, Wash.                         | 17,500    |
| Kahului, Hawaii.   | 10,000    |
| Honolulu, Hawaii.  | 25,000    |
| San Juan Harbor, P. R.   | 8,000     |

### LOCOMOTIVE CYLINDER REPAIRED WITH CONCRETE.

A curious reparation of a locomotive cylinder recently took place at the workshops of the "Sachsenische Maschinenfabrik Gebruder Hartmann" at Chemnitz, Germany. A locomotive was brought in, the cylinder of which showed a tear of three and a quarter inches. Welding was impossible. By way of trial the damage was repaired in the following way:

In the wall of the room near the valve-box on each side a hole was drilled. Through these holes two wheelbarrow-loads of concrete were pressed. The concrete was of equal quantities of sand and cement. After five days the engine was again put into action. Ten months later it was brought to the workshops for further repairs on the engine. It was then noted that the concrete had served its purpose and the cylinder was still in good condition.

The Carolina, Clinchfield & Ohio Railway Co. is preparing a concreting plant for its intended lining of Sandy Ridge tunnel, one and one-half miles long, through Sandy Ridge, near Dante, Va. All the work will be done by the railroad company's forces and with its own facilities.



GENERAL VIEW OF CLEVELAND FILTRATION PLANT IN THE COURSE OF CONSTRUCTION. ONE HUNDRED AND FIVE THOUSAND BARRELS OF PORTLAND CEMENT WERE USED IN THE CONCRETE WORK.

## Cleveland's New Filtration Plant

The new municipal filtration plant recently completed at Cleveland, Ohio, besides being a wonderful achievement in concrete construction, is unique in more ways than one, among which might be mentioned that it was the largest concrete job constructed in the year 1914, and it was completed and turned over to the city six months ahead of the calculated and specified time set down in the contract.

The problem of proper filtration of lake water furnished to the consumers by the city of Cleveland has been one of long standing. It is still unsolved for nearly all of the other lake cities.

The great project was undertaken by Mayor Newton D. Baker in conjunction with two members of his official staff, C. W. Stage, director of public utilities, and Charles F. Schultz, commissioner of water. In the fall of 1913 these officials employed R. Winthrop Pratt as consulting engineer and the plans were ready for letting about this time last spring. R. S. Jones became the engineer of construction and M. Stephenson was designing engineer. The contract was let to the John F. Casey Co., Cleveland, as engineering contractors, and the time set for the completion of the work was 14 months from the time of breaking ground, but providing for a substantial bonus for an earlier completion of the work if such a thing was found to be possible after the work got started.

Promptly on the first of May, 1914, the contract was signed and the John F. Casey Co. took charge of the site. The first thing they did was to throw up four immense Blondin derricks on which were stretched cables equipped with Lidgerwood travelers so that every part of the job could be reached with self-dumping buckets carrying the concrete by a simple arrangement with a pulley to the aerial carrier. The Blondins were provided with elevators so that the concrete from the stationary mixing plant was dumped into a boot from industrial cars, then elevated to the traveling dump bucket and so deposited in the forms.

A regular planing mill and pattern shop was provided and the forms were built to a very great extent so that they would be interchangeable, many sections being used over and over again as the great succession of similar arches progressed.

One of our illustrations shows the wonderful progress gained from the very start of the work, for it became apparent in the first 30 days that the con-

tractors would finish their tasks several months ahead of the contract time.

This filtration plant was designed to have a capacity of 150,000,000 gallons of filtered water per day to supply the city, the intake from the pumps being introduced directly from Lake Erie and the city supply leaving the filtration plant in the established system of mains reaching to all parts of the city.

In laying out the work the entire job was divided into units and each unit let under a separate contract. The largest of these contracts, comprising the construction of the filters, coagulating basins, mixing chamber and main piping, were done by the John F. Casey Co.

One of our illustrations shows the Casey company's operations at the height of the great achievement, when they were already six months ahead of the contract. The work involved 75,000,000 cubic yards of concrete which was reinforced with 2,000 tons of reinforcing steel, besides 2,000 tons of iron pipe and the placing of 350 gates from 12 to 60 inches in diameter and a very large amount of excavation.



SECTIONS OF CONCRETE FORMS BEING PLACED IN POSITION.

At the construction plant previously described sand, gravel and cement were unloaded directly from the cars by the Haynes gravity mixers by means of belt conveyors, assisted by locomotive cranes. Dinky locomotives on industrial tracks hauled concrete to the Blondin derricks from the

mixing plant. The Cleveland Builders' Supply Co. furnished all of the material for the work, amounting to 3,200 carloads of materials of all kinds that were delivered in eight months, the deliveries often running as high as 40 carloads in a single day. Universal cement was used amounting to 105,000 barrels, 57,000 tons of sand and 85,000 tons of gravel comprising the major articles of the tonnage.

The filtration plant proper is compactly arranged in an area 500 by 850 feet. The complete plant will cost approximately \$2,000,000, of which \$1,250,000 has been done by the John F. Casey Co., who state that their success in completing the work six months ahead of time is due to the carefully studied layout of the plant that was used to construct the job, for at no time was there any delay on account of breakdowns or changes. The placing of 1,000 yards of concrete per day was a regular, ordinary record.

The job is a success in every way and reflects a great deal of credit to every one who has been connected with it, from the contractors who have developed the means of handling such a large amount of concrete economically as well as the people who furnished the materials, in such regular quantities as not to delay the operation and at the same time not to get far enough ahead of the work to cause rehandling by accumulating one kind of material faster than it could be used. This great filter at Cleveland sets a very high record of competency for all parties concerned therein.

## Kansas City Sidewalk Contracts.

The Missouri Sidewalk Co. received the contract at Kansas City for the artificial stone sidewalk on Twelfth street between Topping and White avenue, for 4,207 square feet, and for the artificial stone sidewalk on Sixteenth street, for 1,190 square feet.

The contract for artificial stone sidewalk on Fuller street between Eighth and Tenth has been let to S. J. Armstrong and also the paving with the same material of Perry street from Topping to White avenues, for 3,898 and 3,969 square feet respectively.

The Reliance Construction Co. received the contract for artificial stone curbing on Latour street from Broadway to Wyandotte. The contract was for 1,098 linear feet.

D. Munro got the contract for artificial stone curbing on Forty-first street between Woodland and Prospect. The contract called for 4,331 linear feet.

### Flood Prevention.

Our readers are familiar with what we have had to say during more than a decade upon the all important topic of flood prevention throughout the valleys of our great river system. The annual floods in the Ohio and the Mississippi has been our favorite topic for years. For a long time our suggestions were taken as a kind of joke and in fact, it did seem "a long way to Tipperary," but for the past year or so the engineering department of the United States army began to take notice, and soon a definite study of the problem and a plan for action was developed. Well-defined progress is being made with the preliminaries of the big undertaking, and we doubt not that before many years have passed we will see the mighty flood waters of the Ohio harnessed, controlled and conserved for the use of man.

Captain Harold C. Fiske, of the Pittsburgh district office, U. S. Engineers, is in charge of the work of establishing a system of gauging and observation stations in the Allegheny, Monongahela and Beaver river basins, covering an area of approximately 125,000 square miles, constituting the initial watershed of the feed waters of the Ohio. The establishment of these stations which will number from 50 to 60 is preliminary to final recommendations upon which flood prevention work will be based.

Two reports submitted by the engineering board to the Federal authorities, the last of the reports being issued about a year ago, emphasized the need of gauging stations at points along the more important streams in order that the whole range of the problem of water supply, water power, sewage disposal and correlated facts could be adequately studied and determined.

Captain Fiske considers that a real beginning has been made. Through the co-operation of the state authorities and the geological survey and the funds at the command of the engineering corps, it is now possible, he said, to maintain paid observers at the gauging stations already established and those to be instituted. Accurate reports bearing on the subject of water supply and stages covering a period of years will be prepared, the data forming the basis for what is expected to result in the development of the three great basins in the district.

Captain Fiske sees a tremendous possibility in the improvement of the water resources of the district, to include the practical utilization of the rivers for water power, irrigation and sewage disposal. He said that when the Federal, state, county and city governments, with private individuals, co-operated in the work of river improvements the goal sought by the flood commission would be reached. The beginning, he said, had already been made with the establishment of the gauging stations.

"Our last report to the government," Captain Fiske said, "urged these stations as necessary to any scientific attempt to grapple with the flood-prevention problem. We are establishing the stations as rapidly as possible. Then the work of taking measurements will begin. It will require several years to obtain definite facts upon which

to proceed. We cannot cope with floods without studying the rivers and reaching conclusions drawn from data covering a long period of time.

"The notion that we can go down to the river after a flood, look things over for an hour or two and then go back to our offices and draw up plans to end the high waters is, of course, palpably absurd. It is too big a problem to dispose of in that manner. It requires long and scientific study. That is what we are attempting to give it."

### Random Concrete Notes.

The Milwaukee Hydro-Stone Manufacturing Co., recently organized in Milwaukee, Wis., to manufacture concrete blocks and to engage in similar lines of business, filed a voluntary petition in bankruptcy in the Milwaukee federal court on April 3, scheduling liabilities of \$1,756.87 and assets of only \$56.50.

The Chain Belt Co., of Milwaukee, Wis., manufacturer of concrete mixing machinery, together with other lines of equipment, has opened a new office at 320 Temple Court, Minneapolis, under the direction of W. H. Ziegler. The Chain Belt Co. is putting out a new type of concrete mixer, called the "Rex," and it will be this machine which Mr. Ziegler will feature. Mr. Ziegler also handles the Marion steam shovels, the Acme crushers and road machinery, the Wyoming shovels and the Industrial Works locomotive cranes and clam shell buckets.

The new Olsen Concrete Mixer Co., of Elkhorn, Wis., is turning out its new machines and has shipped several large consignments to Philadelphia and other points.

R. M. Hott & Son are fitting up a plant to manufacture concrete brick on the McDowell and Dickson property near Canonsburg, Pa. The plant will have a capacity of 5,000 brick per day.

The Oldham Bennett Realty Co., of Sidney, Ohio, has bought at receiver's sale the Klause & Shuler cement tile and block plant at Jackson Center, Ohio, for \$3,100. The new management has already taken hold.

Six thousand cubic yards of concrete are to be used in the building of 13 piers and four abutments under a contract awarded to Robert Wakefield and the Pacific Bridge Co. on the interstate bridge construction for work in Columbia and Oregon sloughs near Portland, Ore. Work on the contract is under way.

The Weber Chimney Co., builders of reinforced concrete chimneys has opened an office for the Pacific Northwest in the Spalding building, Portland, Oregon, with H. L. Wiley in charge.

The Jensen & Jensen Co., of Chicago, was awarded the contract for paving with concrete the so-called Beloit road from Sixtieth avenue, west of Milwaukee, west to the county line, a distance of four and one-half miles, and the Mukwanago road from the east end of the present pavement to the county line. The price was \$44,544 and includes 53,000 square yards of concrete paving and 20,000 cubic yards of grading. The H. G. Meigs Co., of West Allis was awarded the contract for furnishing the cement.

### PERMANENT CONSTRUCTION ADVOCATE PASSES AWAY.

Col. W. R. Nelson, owner and editor of the Kansas City Star, died in that city April 12 of uremic poisoning, after a long illness. Col. Nelson had in his thirty years of newspaper publishing in Kansas City, done much to make Kansas City a good place in which to live. His most notable assistance probably was in the support of good roads and boulevards not only in the city but in Jackson county, Mo. He was a particularly strong advocate of rock or concrete bridges. Through his papers he gave all through the war period the heartiest support to the various organizations and committees of the building trades which sought to impress on the public the advantage of building while material prices and labor were inexpensive and readily obtainable.

### TO CONSTRUCT \$200,000 VIADUCT.

A reinforced concrete viaduct is about to be constructed by the Norfolk and Western, the Southern and the Chesapeake and Ohio railways over the railway yards and the James river at Lynchburg, Va. The viaduct is to cost about \$200,000, the railways paying the entire cost excepting \$50,000, to be paid by the city, and the approaches, which will be dominated by the city and Amherst county. The structure will be about 1,800 feet long.

The concrete viaduct will have two driveways, a space for street cars and a sidewalk on either side. According to the designer, the structure will be a very handsome affair when completed.

In a convenient little booklet of 24 pages, the Vulcanite Portland Cement Co., Philadelphia, Pa., describes and illustrates the manner in which simple forms for concrete construction may be built. In the publication are shown designs of forms for walls, tanks, posts, culverts, chimneys and farm equipment.

Construction work on the new buildings in the concrete products plant of the Waupaca Sand and Gravel Co.'s plant have been considerably delayed, due to the amount of frost in the ground. Advantage has been taken, however, of the first few days of the spring season and work has been started on the foundation of the new plant. A few orders for early delivery have been received.

The foundations of a new assembling building and power house of the Willys-Overland Co., at Toledo, Ohio, will be constructed by the MacArthur Concrete Pile & Foundation Co. About 1,000 pedestal concrete piles will be driven.

In a suit brought by an Italian laborer against the Andrews Asphalt Paving Co., at Hamilton, Ohio, the unusual spectacle of a complete concrete mixer used as an exhibit in open court was seen.

The Texas Interlocking Cement Star Silo Co. is about to construct a plant at Greenville, Tex., with a capacity of one silo in 48 hours. The plant will undoubtedly be under the management of J. F. Moudy & Son.

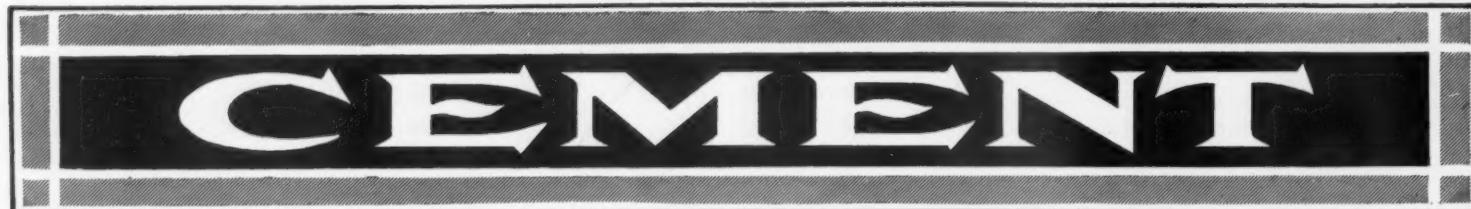


PROGRESS OF FILTRATION PLANT CONSTRUCTION.



VIEWS, LEFT TO RIGHT, SHOW CONDITION OF WORK ON JUNE 16, 1914; JULY 20, 1914, AND AUGUST 31, 1914.





## Finding the Lost Word.

The cement situation grows stronger with each succeeding day. Steady, good weather has been very encouraging and it has prevailed almost without exception in all parts of the country. While there is little disposition to contract for future delivery beyond 60 days, a very healthy volume of business has been booked during the last four weeks. The actual movement of tonnage has also been very gratifying, somewhat greater in the Lehigh district than elsewhere, and the over-winter stocks have practically disappeared. In the West, where farmers are exceptionally well supplied with cash just now, there exists great confidence in every line of trade and permanent improvements of every kind have been revived with enthusiasm. Much the same condition exists in the Eastern portions of the country by reason of the encouragement of manufacturing interests and the ever-present pressure of the balance of foreign trade in our favor. Our own private advices from every section of the trade frankly admit surprising good and favorable business conditions, with the tendency always to keep the good tidings under cover, if possible, to prevent undue activity of competition. Really this is altogether uncalled for, because all possible sources of competition tell the same kind of a story. There is no use longer of being bashful about the matter. Let's admit the soft impeachment that the first letters of the magic word "prosperity" have already gone to record in the season of 1915.

## Cement Conditions in Germany.

(From Our German Correspondent.)

Berlin, Germany, March 14.—The European war is having a big influence on the German cement industry, the working capacity of nearly all the plants having been considerably reduced. The storehouses have large accumulations of cement and only few sales are reported. The domestic demand is very slow and it is very difficult to obtain cars for transport. The export business has practically come to a standstill. Most of the workmen are in the army. Owing to the decree issued by the government that coal must be coked, it is almost impossible to get the necessary coal supplies. Many manufacturers fear that they will be compelled to shut down or reduce their working capacity to a minimum.

Most of the German cement plants have rotary kilns and in 135 plants 209 of these kilns are used. The number of upright kilns before the war began amounted to 701, but the greater part of them were not in action. However, it is most probable that the war will entirely change the situation. The minimum capacity of a rotary kiln is 450 N. F. clinkers in 24 hours, which approximately is equal to the production of four upright kilns, so that in ordinary times rotary kilns are given the preference. However, those manufacturers who have their plants equipped for rotary kilns only are badly handicapped now because of the lack of coal and the existence of unfavorable conditions. It is expected that many of them will shortly be compelled to cease operations.

### Increasing Use of Paper Sacks.

Owing to the absolute blockade of Germany by the allies jute is getting very scarce in that country and jute sacks are advancing steadily in price.

Under 20 cents no sack is to be had and to meet this inconvenience for the cement and lime industries paper sacks are coming into general use and getting more popular. The price of a paper sack for cement of the same size as a jute sack costs around two and one-half cents. A strong paper sack offers the advantages of being free from dust, quick to empty, and no cement adheres to the inner surface. When made of sufficiently strong material it is well able to stand the strain of transportation.

## National Cement Demands Show Gain.

New York, April 19.—Pre-building season orders for cement as shown by March shipments from the Lehigh valley and Hudson river district mills indicate a total consumption for 1915 of 100,000,000 barrels. This is 12,000,000 more than was manufactured in the country last year. National cement demand for all states between Maine and Utah developed a movement of cement 11 per cent in excess of that for March last year and mills are 10 per cent behind last year's bin supply.

In view of the tie-up of building in Chicago, the lateness of the building season in New York and New England, this is considered remarkable and decidedly significant. Up to April 15, railroads had not come heavily into the market for construction materials, although following the sharp buying of railroad and equipment securities on the New York Stock Exchange the Pennsylvania Railroad announced that it will release equipment and construction material orders running up to \$20,000,000 on May 1 and the Lehigh Valley will open bids for new building materials on the same day amounting to considerably over \$1,000,000.

The Central Railroad of New Jersey is taking on more men to handle the increased amount of freight that is developing along the Baltimore & Ohio, the Reading and its own main line which touches the plant of the Bethlehem Steel Co. and the big ore deposits of Pennsylvania. The Lackawanna is laying out work for several millions of dollars and the New York Central is in line for structural materials amounting to \$5,000,000.

Portland cement in this market is still being quoted at \$1.23 a barrel, in 500-barrel lots alongside, New York dock. But there is little cement moving. Dealers stacked so heavily when the first low price was made that they have little room for new cement and they are working off their old supplies.

### CEMENT BUSINESS IMPROVING.

Speaking of the general conditions in the cement industry, Blaine Smith, sales manager of the Universal Portland Cement Co., says: "Conditions are certainly improving, both in sentiment and in actual business being done. A number of new projects, which were held up last August, are now being figured and work on others has already started. With plenty of crops and an improvement in the steel business, which is a barometer of general conditions, and a better tone everywhere, there is no question but that we are rapidly improving. Everything that happened a year ago was on the decline and just the reverse of conditions exists now. Anything that can happen must be along the lines of improvement."

## Hagar Announces General Plans.

New York, April 20.—It was reported that E. M. Hagar, who is organizing an extensive line of cement plants, had acquired three, the names of which cannot now be made public. Mr. Hagar was at the Waldorf-Astoria last week in conference with several persons. This statement regarding the plans of the company he is forming was made public:

"It is not time to speak in detail of the plans of the proposed company, but I can say that the company will be capitalized not in excess of \$25,000,000 with a possible minimum of \$20,000,000. The stock will be all of one-class. There will be no bonded indebtedness. Should the company require additional working capital or money for plant extensions in the future, that would be provided out of earnings. The object of the company is to establish a chain of plants over the country. These plants will be obtained by purchase where practicable or by building where necessary."

"In order to avoid any complication with the government or infringement of the terms of the Sherman anti-trust law, any plants which I may purchase will be non-competing. It is my desire and intention to operate in strict conformity with the laws of the United States and the various states in which we may operate."

Regarding the cement industry Mr. Hagar said: "For years the cement industry has been hampered as the result of freight rates. Manufacturers have been unable to handle business successfully in territory beyond a radius of 150 or 200 miles from their plants. The present plan involves what may be termed a 'coast to coast' cement company, with plants located at advantageous points throughout the country. The entire country will be divided into territories which may be described within circles, each circle touching the other adjacent with a plant as near to the center of the circle as possible. In this way the company will be enabled to overcome the hampering cost of freight for long distances and will be enabled by reason of the magnitude of the output to successfully compete with any other producer of cement."

### LEHIGH'S NATIONAL ADVERTISING.

Full page advertisements of the Lehigh Portland Cement Co. will appear in the April 24 issue of the Saturday Evening Post and the Literary Digest, publications having national circulation. In conjunction with these public announcements of the merits of Lehigh cement, complete co-operation is being given retailers of this brand to cash in on the advertising. Copies of the advertisement have been sent to all Lehigh dealers with a request that they be hung in conspicuous places during the week of the national advertising. In addition to this assistance plates of the advertisements for local advertising, as well as lantern slides for moving picture theatres, have been sent to the trade.

### BLAST DISPLACES 125,000 YARDS OF ROCK

On March 23 the Riverside Cement Co., of Riverside, Cal., set off at their quarry one of the largest blasts ever attempted in the West. Sixty tons of nitro-glycerin were exploded by electricity, displacing 125,000 cubic yards of rock estimated to weigh 600,000 tons.

### Brazilian Market for Cement.

So far as can be learned, no cement is manufactured in Brazil, and the country has for some years offered a favorable and growing market for cement from foreign countries, says Consul General Alfred L. M. Gottschalk of Rio de Janeiro, in Commerce Reports. His letter was written under date of March 1. Continuing, he says that the following table shows the value of the imports of cement into Brazil during 1912 and 1913 by principal countries of origin:

| Countries       | 1912        | 1913        |
|-----------------|-------------|-------------|
| United States   | \$ 275,942  | \$ 765,023  |
| Germany         | 2,525,183   | 2,978,914   |
| United Kingdom  | 1,138,048   | 1,918,481   |
| Belgium         | 960,125     | 906,531     |
| Denmark         | 122,245     | 110,639     |
| France          | 117,025     | 175,035     |
| Other countries | 125,393     | 264,587     |
| Total           | \$5,263,961 | \$7,119,210 |

The imports of cement in 1914 amounted to only a little over \$2,000,000. The decrease is attributable principally to the following causes. The temporary business depression prevailing in the country has to a large extent curtailed construction work and building operations of all sorts, and the Federal Government, probably the largest consumer of cement in Brazil, in its present policy of retrenchment and economy in public expenditures, has, for the present at least, suspended many proposed public works, such as railway extensions, docks, buildings, and dams, all of which would involve the use of large quantities of cement.

#### Opening for American Cement.

The partial shutting off by the European war of Brazil's former chief source of supply of cement, with its low-priced product and easy credit terms, has done much to lower the import figures; and the fall in exchange of Brazilian paper currency has naturally increased the local market price of cement proportionately, as local importers were obliged to meet their obligations abroad in gold. War risks in navigation have caused a marked rise in freight and insurance rates, and this condition, which, together with the fluctuating exchange has affected all trade here, has not been without its effect on the market for cement. In spite of the decrease in imports, the present time is believed to be propitious for the introduction into this market of American cement. One American manufacturer has considered the Brazilian cement market of sufficient importance to warrant sending a representative here periodically.

The striking preference shown in Brazil for established and well-known brands of goods is manifested in the sale of cement here. Builders and contractors are fairly familiar with the various brands of European and American cement and hesitate to experiment with any new brands. But now that certain favorite European brands are temporarily out of the market, the time seems unusually favorable for the introduction of American cement.

#### Preferential Tariff Prices.

The United States enjoys a preferential reduction of 20 per cent in the customs duties on cement as compared with all other countries. This preferential tariff has been reenacted from year to year by Presidential decree after Congressional authorization and has already been renewed for 1915.

During normal times the lower grades of cement have sold here at \$2.76 to \$2.92 United States currency per barrel of 150 kilos (330 pounds), and the better grades from \$3.24 to \$3.89 per barrel. European cement was obtainable at the lowest prices named and American at the highest.

According to the Junta dos Correctores (Brokers' Association), the price per barrel of various brands of cement for the week of Feb. 22-27, 1915, was as follows:

|             |        |
|-------------|--------|
| Pyramid     | \$4.25 |
| Atlas       | 4.25   |
| Excelsior   | 4.25   |
| Visurgio    | 4.13   |
| Saturno     | 4.13   |
| Picareta    | 4.12   |
| Exposicao   | 4.13   |
| Coroa Preta | 4.13   |
| Cathedral   | 4.00   |
| Gratry      | 4.00   |

In the northern cities of Brazil, cement is selling at \$4.75 to \$5 per barrel. [The normal value of the Brazilian paper milreis is \$0.3244; its present value is about 25 cents. Conversions have been made at the former rate for normal prices and at the latter rate for present prices.]

#### Methods of Introduction—Packing.

During normal times very little in introducing cement or any other article of commerce can be accomplished by correspondence, but at present it may be possible for American manufacturers of cement who have never sought business in Brazil and who do not wish to go to the expense of sending a representative through Latin America to make connections with houses that formerly purchased European cements. Such arrangements, however, are not always entirely satisfactory, as they do not afford the close personal touch that makes for enduring commercial relations. A list of orders obtained by mail may constitute a business that seems satisfactory for the present, but at the close of the European war Brazil may revert to its original sources of purchase. It is to be regretted that so few American manufacturers are represented by competent salesmen with a knowledge of Portuguese and power to grant special credits and to place agencies. Purchases are made here by large importing houses.

European cement, it is claimed, arrives here in better condition than American cement. The English have adopted a very satisfactory packing, shipping the product in barrels of the usual volume (330 pounds), tongued and grooved, having two iron and two wooden hoops, and lined with waterproof paper.

#### Quotations and Customs Duties.

Although quotations f. o. b. New York are often acceptable, local importers naturally prefer quotations e. i. f. Rio de Janeiro. Owing to the complicated method of calculating the Brazilian customs duties, the entry of goods and payment of duties may be left to the consignors (as is usually done) who have competent customs brokers in their employ.

Shipping arrangements may be made with the Lloyd Brazileiro Line, 17 State Street, New York City; the United States Brazil Steamship Co., 20 William Street, New York City, or the British Lamport & Holt Line, 26 Exchange Building, New York City.

#### Domestic Manufacture.

Two cement factories have been established in Brazil, but neither is operative at present. The largest, established about three years ago, was situated in Rodovalho, on the Sorocabana Railway, in the state of Sao Paulo. It is said to have been sold for about \$100,000 to an Italian syndicate. When this factory was first installed it sold cement in Rio de Janeiro at \$2.92 per barrel, but soon raised its prices and found it impossible to compete with foreign cement.

The other factory was established by important banking interests at Itapimirim, in the state of Espirito Santo, in connection with a sugar mill, shoe factory, and other industrial works; but the cement factory, it is said, was never put into operation, probably through lack of capital caused by business depression.

Undoubtedly there will some time be a native cement industry in Brazil, since lime is to be had locally, and there are said to be extensive deposits of excellent limestone in the interior. The chief problem to be overcome is that of transportation to the seaboard. At present the overland freight rates from distant points in the interior often exceed those of transporting from Europe to Brazil, and to many interior points no railways have thus far been built.

The Choctow Cement & Lime Co., has been incorporated at Hartshorn, Okla., with a capital of \$400,000. Incorporators are S. C. Wingate, N. E. Tuell of Hartshorn, and J. A. Henry of Altus.

### Portland Cement Trade in Costa Rica.

During the calendar year 1913 Costa Rica imported 37,931 barrels of Portland cement (barrel=397 pounds). The countries whence imported and amounts purchased therefrom were as follows: Germany, 17,534 barrels; United States, 14,696 barrels; Belgium, 3,401 barrels; Great Britain, 1,755 barrels; other countries, 545 barrels; total, 37,931 barrels.

Germany is the chief country of origin, and the leading brand supplied is "Alsen," which is shipped in steel barrels or drums. Some of these steel drums have reinforced heads of wood placed on the inside of the container. The gross weight is 397 pounds, and the steel containers weigh approximately 22 pounds, giving a net weight of 375 pounds. According to the books of a local importer, a shipment of "Alsen" cement, bought in June, 1914, cost \$1.52 per barrel in Hamburg, making the e. i. f. price at Port Limon, Costa Rica, \$2.92 United States currency.

The United States is the second country of origin for Portland cement, and various American brands are used. The American cement is shipped principally in wooden barrels with the same gross weight as the German containers, namely, 397 pounds. A recent quotation on American cement was \$1.46 f. o. b. New York. This figure would make the e. i. f. Limon price for American cement approximately \$2.60 per barrel in wood, as compared with the German cement in steel drums at \$2.92, thus making the German cement cost 32 cents more per barrel.

#### Steel Drums Preferred for Shipping Cement.

The American cement is imported chiefly by the railroads and the United Fruit Co. for practically immediate consumption, and the German cement is imported principally by the dealers who carry large amounts for several months at a time. On the part of the dealers there is a strong prejudice against the wooden barrel, and they are willing to pay the additional cost of 32 cents per barrel to obtain the steel drums, according to Consul Samuel T. Lee, of San Jose. American cement manufacturers have thus far refused to meet local demands of shipping in steel drums, and the trade has suffered as a result. The American manufacturers insist that they have an excellent tongue-and-groove barrel which is in every way equal to the steel drum, but the consul claims that actual experience does not prove this to be a fact. The loss in shipment with steel drums is practically nil, and there is no subsequent deterioration caused by the dampness of the long rainy season, while with shipment in wooden barrels there is said to be a loss of at least 10 per cent in transportation.

#### Comparative Cost of American and German Cement.

The following are the itemized costs of placing a barrel of American cement in warehouse at San Jose, Costa Rica, which is the capital and chief distributing center of the Republic:

|  |        |
|--|--------|
| F. O. B. New York cost   | \$1.46 |
| Ocean freight, New York to Port Limon, Costa Rica, at 27 cents per hundredweight | 1.07   |
| Insurance, at 45 cents per \$100   | .01    |
| Commission at 2½ per cent for cash trading                                       | .06    |
| Cost c. i. f. Limon, Costa Rica  | \$2.60 |

The subsequent Costa Rican costs, which are the same on all cement imported, are:

|  |        |
|--|--------|
| Duty and wharfage  | Free   |
| Unloading and dispatching  | \$0.36 |
| Railroad freight from London to San Jose in minimum lots of 100 pounds | 2.36   |
| Cartage  | .13    |
| Incidentals  | .02    |
| Total Costa Rican costs  | \$2.87 |
| Plus c. i. f. Limon cost   | 2.60   |
| Cost at San Jose   | \$5.47 |

The following are the items of c. i. f. Port Limon cost for German cement in steel barrels:

|  |        |
|--|--------|
| Hamburg f. o. b. cost                  | \$1.52 |
| Ocean freight, Hamburg to Limon        | 1.29   |
| Insurance                              | .03    |
| Commission at 3 per cent, cash trading | .08    |
| Total cost per barrel, c. i. f. Limon  | \$2.92 |

## The Proper Storing of Cement

By C. M. Wood, M. E., Sales Department, Chicago Portland Cement Co.

From the time that finished cement leaves the mills and rolls and is placed in storage it is open to the attack of moisture and dampness. Cement is made to associate and combine with water, and it is constantly on the alert and eager for the consummation of this natural affinity.

This latent activity of the cement is often disregarded, and the result of such disregard is invariably measured in dollars and cents by the dealer and handler of cement. Minute particles of water with which our atmosphere is laden in a greater or less degree, depending upon the season, as well as the locality, are also a constant source of menace, as well as having an undaunted searcher in the cement itself. Naturally, therefore, the cement is absorbing these minute quantities of moisture, with the result of extremely affecting the life and setting qualities of the cement in question. A thought well worth bearing in mind is that cement "once set" is useless as far as successive use is concerned, and once the water and cement have joined hands no mortal power can again separate them to their original state of usefulness.

One of the essentials requisite to the making of mortar and concrete is the addition of a predetermined amount of water. This water has no mechanical or chemical effect upon either the sand or rock involved in so far as cementing qualities and ultimate hardening is concerned, but it does act with rapidity and effect upon the cement incorporated in the mixture of cement and sand, or cement, sand and rock. It is this action between the water and cement which, when combined in certain proportions, causes what is universally known as the "setting of cement," and this action which takes place between the cement and water is termed "hydration."

The peculiar chemical construction of cement permits the ultimate hardening when the cement is associated with water, and on this account, as well as the fact that when cement is placed in proximity to moisture it permits of a union between the cement and the adjacent source of moisture, due to the keen affinity of the cement for water, it is extremely important that a scheme be employed whereby the cement will retain its life and setting qualities until such time as it finds itself in the forms, walls or floors. To obtain, therefore, the best results when using cement, particular attention must be paid to its previous place of storing and surroundings. Perfect work cannot be obtained in any line of endeavor where the materials used have been allowed to deteriorate or become affected in a manner by which their original usefulness will be impaired. Too much attention cannot be paid to this fact in connection with cement. The moisture in the air, slight as it may appear, has a marked effect upon cement and can only be guarded against by the most particular precautions. As lime will "air-slake," so also will cement "air-set," which is nothing more nor less than the cement absorbing moisture and dampness from the atmosphere and at once acting as it was originally intended to act, namely, "setting."

It is impossible to urge too strongly proper methods of storing cement, whether it be in connection with the dealer, the contractor or the small consumer, such as the farmer, or the town dweller who stores a few sacks of cement until such time as he may be able to build a back door step, or make some small repairs, etc., etc.

In the case of the dealer, he is often obliged to hold in storage a quantity of cement, and, as occasionally happens, keep it in storage for a considerable period of time. A quantity of cement thus warehoused by a dealer represents a considerable financial investment and it likewise permits an appreciable loss if proper provisions are not made to safeguard the cement from the attack and influence

of the atmosphere, especially in localities where the rainfall is at all heavy.

In order, therefore, to prevent the loss of cement due to partial or complete hydration, which loss also represents a financial one to the owner, it is imperative that the owner carefully consider his storage facilities. In this connection it is pertinent to state that there is also the possibility of criticism; unfounded, but nevertheless occasionally occurring, directed against the manufacturer of cement by users claiming that the cement itself is at fault when they have received cement from a warehouse where it has been improperly stored and consequently affected by dampness. While these claims are conspicuous by their scarcity, yet such claims have been presented.

A dealer, no matter in what line, establishes his reputation by the quality of the product he handles and especially its condition as put before the consumer. More than one dealer in building materials has had cause to wonder why his sales of cement have shown a decrease from year to year instead of an increase, as perhaps his other lines have shown. It may be possible that he has overlooked the fact that where some of his cement had been in storage the wind, rain and snow had ample opportunity to enter his warehouse with the resulting consequence that the cement which came in contact with the elements immediately began to absorb and combine with the moisture and in due course of time to harden. Probably just at this time Mr. Consumer came to purchase a few sacks or a few barrels of cement, and, as a natural sequence of events, received some of this damaged cement. When he endeavored to use these goods he was soon able to discover their imperfect condition, with the result that the dealer who sold this cement lost a customer.

The same general conditions obtain with the contractor. Unless ample precautions are made and adhered to in regard to the storing of his cement on the site where the building operations are in progress, he is courting the possibility of loss due to the spoilage of his cement by rain, dampness, dew, or possibly snow. It is indeed gratifying to learn that recently both engineers and architects, in drawing up their specifications for work of various kinds, embody in their specifications a rigid clause dealing with the method of storing and means to be provided for protecting the cement from the elements.

It is, however, in the case of the small user, such as the farmer, that the question of proper storage is almost entirely ignored. For instance, a farmer has finished a piece of work on or around his farm and may have remaining upon completion of this work three or four, or possibly half a dozen, sacks of cement. A great many of the farmers will delegate one of their farm hands to take this cement and put it in a building, but fail to pay particular attention regarding the kind and type of a building in which this cement is finally stored. It often happens that it is thrown in some outlying shed and very often upon a dirt floor. It is therefore very easy to imagine the frame of mind of the average farmer when a short time later he is desirous of using this cement and upon examination of the sacks finds in place of sacks full of fine, soft, bluish-gray powder, solid stones of the exact size and shape as the original cement sacks.

The value then of the proper storage of cement may be summed up in a very few words as follows: The prevention of financial loss; the occasional loss of customers and trade; the prevention of needless and unwarranted criticism of the cement manufacturer; and last, but not least, prevention of the loss of temper on the part of the farmer, as illustrated above.

To properly store cement a few fundamental rules and precautions should be as closely adhered to as

possible. Primarily, the building should be weather-proof and the floor tight and not resting directly upon the ground, and the floor should be provided with means for proper ventilation. Many dealers who have made a success in the handling of cement insist upon laying a double floor in their warehouse with a layer of building paper between. This insures beyond all doubt that no dampness will penetrate and be absorbed by the cement resting directly upon the floor. It is advisable also to see that the cement is not stored in such a position that it will be exposed to draughts of damp, moisture-laden air from doors or other openings in the storage warehouse; likewise it is a good idea to pile the sacks as compactly as possible, thereby eliminating the intervening air spaces in and around the sacks and so exposing a larger sack area to the ravages of the damp air.

It is safe to assert that everyone connected or associated in any way with the manufacture, handling and use of cement is interested in seeing proper storage methods employed, but this question resolves itself into one of local import, depending upon the care and thought of the party interested.

### CEMENT SCARCE IN AUSTRALIA.

Considerable anxiety in connection with the erection of public works is being experienced in Melbourne, Australia, owing to the possibility of a shortage in cement supplies, according to consular reports.

It was stated on Feb. 26 by the minister for home affairs, Mr. Archibald, that all the local suppliers were employed to their full capacity, this being possibly due to the necessity of replacing the supplies which under former conditions were obtained from Germany, in order that there should be no interruption in Commonwealth work. Negotiations were proceeding for the purchase of a considerable quantity of cement in New Zealand.

The imports of Portland cement into Australia in 1912 totaled \$1,273,406 in value, of which only \$6,589 worth came from the United States. The total imports in 1913 amounted to \$1,285,977, of which but \$6,278 worth was from the United States.

### "FRENCH" BRAND BEING INTRODUCED.

Samuel H. French & Co. are introducing to the trade their own brand of Portland cement, which will be known as French's Portland cement. The house of French at Fourth and Callowhill streets is the oldest manufacturing and jobbing concern in the United States, having been in continuous operation in one location since 1844. They have records of importations of English Portland cement dating as early as 1850, and some of the concrete work which was done with cement from the first shipment is yet in existence and steadily doing business. This concern has always done an extensive business throughout the entire Atlantic seaboard and enjoys a very high reputation in the business world. J. Hansell French has taken charge of the sales of Portland cement and, being full of energy and enthusiasm, his popularity and that of his brand, grows steadily wherever he goes.

### MANUFACTURERS' DIRECTORY OUT.

The 1915 edition of the Directory of Cement, Gypsum and Lime Manufacturers is now ready for distribution. The publisher's introduction states that every care has been taken to make it complete and that in so doing the assistance of manufacturers in various parts of the country has been given. The directory is printed in book form and measures three by five inches. It is neatly printed and attractively bound in leather and finished with gold edges. For persons interested in the cement, gypsum and lime industries it is a valuable source of information.

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THE FRANCIS PUBLISHING CO.  
537 S. Dearborn Street Chicago, Illinois

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WANTED—Position as Superintendent or would accept a position as Foreman of crushing plants or Lime. Thoroughly experienced both clerical and practical. Address Box 1052, care ROCK PRODUCTS AND BUILDING MATERIALS.



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Strongest and Most Durable

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of this page as a means of quickly and satisfactorily filling your requirements are immeasurable and the low cost of announcements when compared with the service rendered, is a further inducement.

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Remittances should accompany the order. No extra charges for copy of paper containing the advertisement.

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|----------------|---|-----------------|
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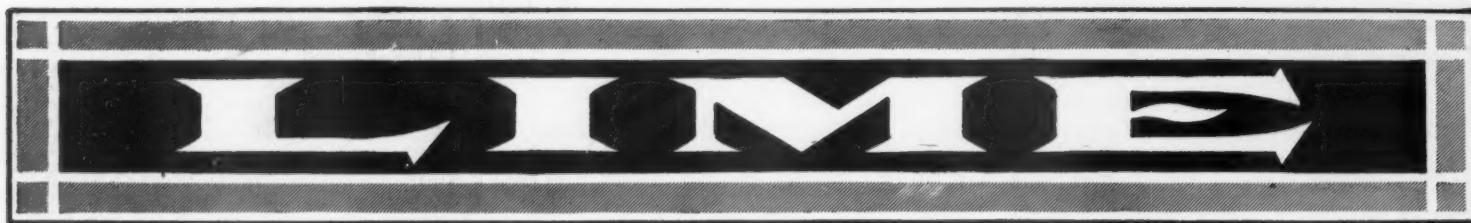


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## A Modern Hydrated Lime Plant

BY RICHARD K. MEADE.

One of the newest hydrated lime plants is that of the Dutchess County Lime Co., at Dover Plains, N. Y. This plant was completed last fall and has now been in operation for about four months. This company, however, has been in existence for several years, operating two small kilns about two miles from the town of Dover Plains, hauling their lime to the railroad with teams and bringing the coal and other supplies to the plant by the same means.

The stone found on the property is a high grade magnesian limestone, of which the following analyses give a good idea:

### Analyses of Limestone.

|                        | From old<br>quarry. | From new<br>quarry. |
|------------------------|---------------------|---------------------|
| Silica                 | 0.74                | 0.88                |
| Iron oxide and alumina | 0.92                | 0.90                |
| Lime                   | 31.04               | 30.74               |
| Magnesia               | 21.03               | 21.11               |
| Loss on ignition       | 46.34               | 46.64               |

The lime has been sold for years in New York City, Albany, Poughkeepsie and other cities along the line of the New York Central railroad, and enjoys the reputation of being a very high-class building lime. About a year ago the company decided to build a new plant, consisting of both kilns and hydrating equipment, and commissioned the writer to prepare plans and specifications for this plant.

### Kilns Located Near Quarry.

The general lay-out of the plant is shown in Fig. 1. The kilns are located at the end nearest the quarry; next comes the cooperage and barrelling department; then the boiler room and the hydrating plant, in the order named, and finally a storage for hydrated lime, which latter is not yet completed.

The kiln building is designed to receive five kilns, two of which are already in place. These kilns are of the general type found throughout Maryland and Southern Pennsylvania (see Fig. 2). They have been modified, however, so as to obtain both increased output and economy. The kilns are equipped with two fire boxes, one on each side and a cooling cone below. They also have a storage

stone in the upper part of the kiln. The capacity of the kilns on the stone found at Dover Plains will average about 12 tons per day. The fuel ratio is about one of coal to four of lime.

Arrangements have been made to install a belt conveyor to carry the lime from the kilns to the



FIG. 2. THE KILNS DURING CONSTRUCTION.

hydrating plant, but at the present time the lime is being wheeled from one to the other.

### Arrangement of Hydrating Plant.

On entering the hydrating plant, the lime is first passed through a Sturtevant open-door crusher. This reduces the lime to such size that it will all pass through a one-half-inch screen, which is fine enough for hydrating purposes. From the crusher the lime is elevated into a large bin on the third and top floor of the building. This bin is of steel and holds about 20 tons of lime. The bottom of the bin is provided with a spout and gate, the latter being opened and closed by a lever. Below the spout is located the weighing hopper and, beneath this, the hydrator (see Fig. 3). The hydrator employed is a Clyde. It rests on the second floor and the scale

box, valve and indicator to the water tank are also on this floor, so that all the operations of the hydrator are controlled at one point. The lime is weighed out in batches of 200 pounds and dumped directly from the scale hopper into the hydrator. The water is measured in a tank which is beside the lime bin and is sprayed on the lime after the latter is introduced into the hydrator. The process of hydration lasts about 20 minutes, although it is probable that when the plant is pushed for capacity this time can be shortened to 15 minutes, as this lime hydrates very rapidly, particularly so for a magnesian lime.

After passing through the hydrator, the lime is dumped into a large bin or hopper, capable of holding comfortably the charge from the hydrator. This hopper is of steel and is provided with an automatic feeder at the bottom. This feeder serves to regulate the supply of lime going from the hydrator to the pulverizer and is so adjusted as to empty the hopper before the new charge from the hydrator is ready to be dumped. The lime falls from the feeder into a screw conveyor, which carries it to the pulverizer.

For treatment of the lime after passing through the hydrator, the Raymond system is used. The lime first goes to a No. 1 automatic Raymond pulverizer (Fig. 4), located on the ground floor, which mill is equipped with a throw-out. This latter separates from the hydrate any large pieces of core or unhydrated lime left in the product of the hydrator. From the pulverizer the fine product is sucked by means of a No. 11 fan (Fig. 5) and blown into a seven-foot dust collector. This latter is located above the packing bin.

### Only One Elevator in Hydrating Plant.

It will be noticed that for the hydrating part of this plant only one elevator is used, namely, that for carrying the lime from the crusher to the lime bin. This is a feature of all the plants which the writer has designed, thus greatly simplifying the installation.

In connection with the cyclone dust collector there is also a tubular collector with 18-foot tubes. This is designed to catch the dust in the exhaust from the Raymond system. The product obtained from this is so fine that all of it will pass a 100-mesh screen and, on account of this extreme fineness, it is suitable for the manufacture of grease and for other uses where a superfine hydrate free from grit is necessary.

Space has been left in the building, and all ar-



FIG. 1. NEW PLANT OF THE DUTCHES COUNTY LIME CO., DOVER PLAINS, N. Y.

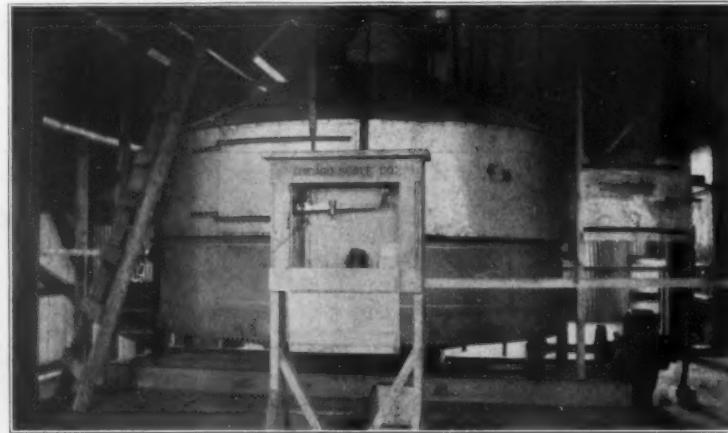


FIG. 3. THE HYDRATOR.

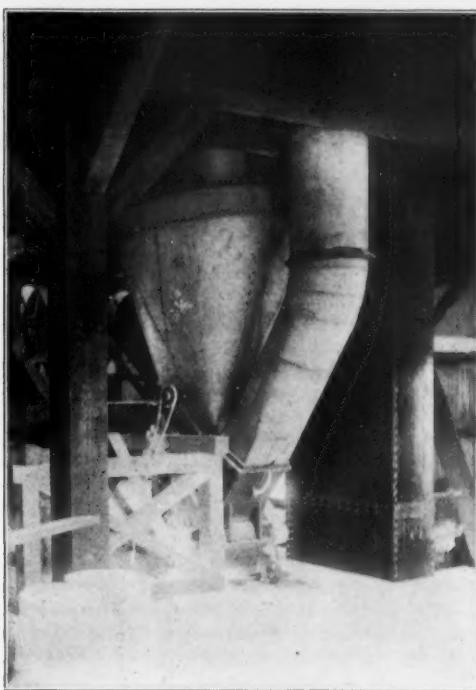


FIG. 4. RAYMOND PULVERIZER.

arrangements made, for adding another hydrator and separating system whenever it is desired to double the capacity of the plant, which has been designed with this end in view.

#### Plant to Be Dustless.

From the dust collector, the hydrate, as previously stated, falls into a bin above the packing machine. This latter is of steel plate supported on steel columns and holds 40 tons of hydrate. A novelty in its construction is a partition dividing it into two parts. By an arrangement of slides, hydrate may be packed from either side with the same packing machine. This feature is designed to allow two grades of hydrate to be manufactured at once, the inferior product being obtained from the Fuller mill, as explained further on. The packing is done by the Bates packer and Bates valve bags are used. This packer is now being equipped with a dust catching system which will remove practically all dust and will make the plant almost dustless. This system consists of a suction fan, connected with a pipe running along behind the packing machine. Branches with opening extend to the tubes of the machine and the spill from the tubes is sucked away through the pipe. The dust is discharged into the dust collector of the Raymond system.

#### Equipped to Produce Pulverized Limestone.

A feature of this plant is the equipment for pulverizing limestone. For this purpose a 36-inch Fuller mill is employed, and with it almost any fineness desired can be obtained. Where the limestone is desired for agricultural purposes, the mill is provided with a one-quarter-inch mesh woven wire screen. This gives a product sufficiently fine for farm requirements. At this fineness, the mill will grind about five tons of the Dover Plains dolomite per hour. The limestone to be pulverized is passed through the same crusher used for the lime, goes up the same elevator and into a screw conveyor, which carries it to a bin over the Fuller mill. As the capacity of the crusher is eight to 10 tons per hour, this is amply large enough to take care of both the hydrator and the pulverized limestone departments by working first on lime and then on stone. The discharge from the Fuller mill is taken up by an elevator to another bin and it may be packed from this into bags by hand or it can be spouted directly from the discharge of this elevator into the cars.

There is also an elevator leading from the throw-out of the Raymond mill. This takes the tailings

from the latter up to the bin above the Fuller mill (which bin has a special compartment for these tailings), where they can be mixed with limestone and ground for agricultural purposes, or they can be mixed with fresh hydrate, ground and elevated into one of the compartments of the hydrate packing bin. The idea of this latter arrangement is to allow the making of a very fine hydrate by adjusting the Raymond mill to reject all but the finest hydrate. The coarse material so rejected is then ground in the Fuller mill and sold as second grade of hydrated lime. The two compartments in the packing are to allow the two grades of hydrate to be manufactured simultaneously.

Figures six and seven show the general arrangement of the plant.

#### Power Plant Amply Equipped.

Power for driving the plant is obtained from an Atlas-Corliss engine, which can develop about 135 horsepower. Steam for this is supplied from two water tube boilers, which have a rated capacity of about 60 horsepower each. The machinery installed at the present time requires only about 75 horsepower, the additional power available being intended for the plant after its capacity has been doubled.

Coal for the boilers is brought in on the south side of the plant on an elevated track and dumped into a pocket opposite the boiler, while the coal pockets for supplying the lime kilns are located further on along the same tressel. The coal is elevated up to the firing floor by the use of a bucket elevator. The cars to be loaded are brought in on the north side of the plant and the platform from the bagging machine is on a level with the car floor.

The kiln building is 100 feet by 53 feet and is of steel covered with corrugated iron. The firing floor is of concrete and steel, and all of the ground floors

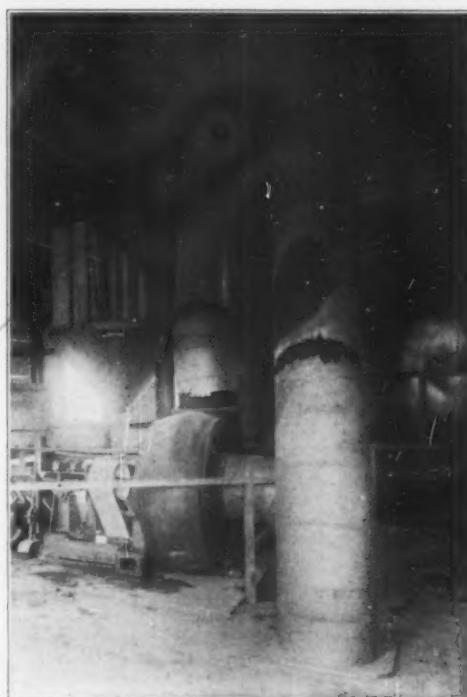


FIG. 5. EXHAUSER OF THE PULVERIZER SYSTEM.

throughout the buildings are concrete. The hydrator building is 60 feet by 53 feet, of frame covered with galvanized iron and the construction throughout this is heavy mill-type. At the present time, a store house, 53 feet by 100 feet, is being built. This is of light steel construction and will be covered with galvanized iron. This stone house is designed to hold hydrated lime in bags. It is the intention, however, very shortly to put in a steel tank storage in which the hydrate will be stored

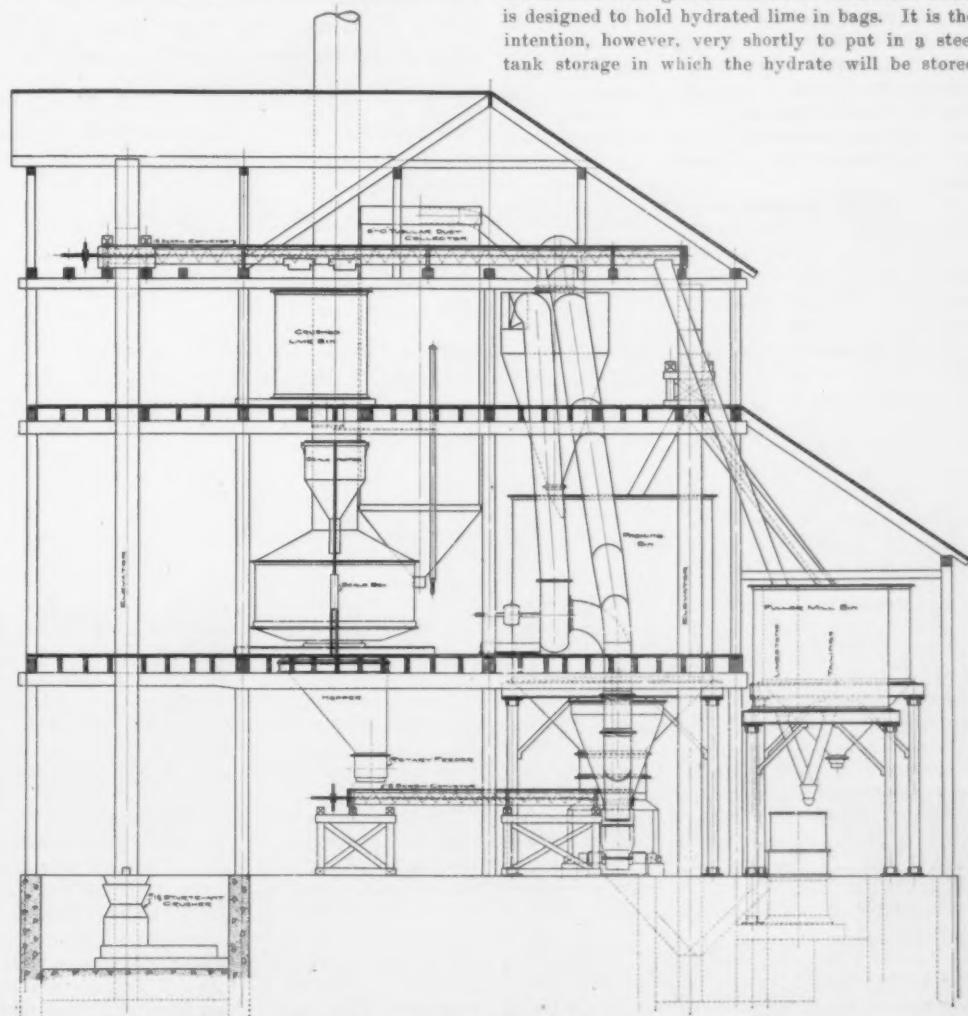


FIG. 6. SIDE ELEVATION OF HYDRATING PLANT OF DUTCHESS COUNTY LIME CO.

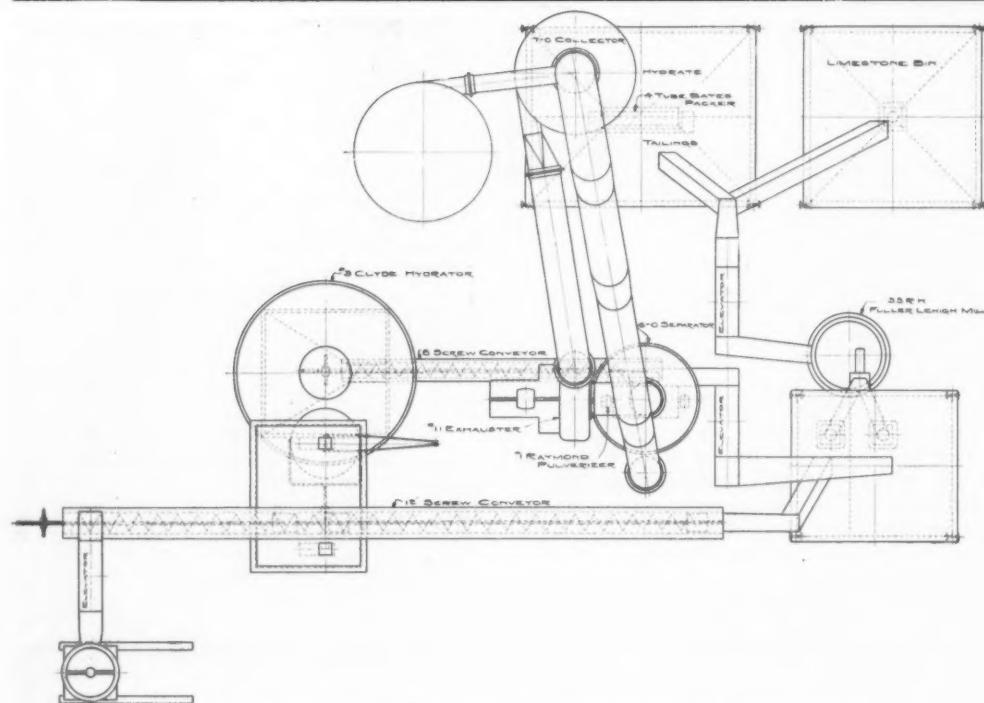


FIG. 7. FLOOR PLAN OF HYDRATING PLANT OF DUTCHESS COUNTY LIME CO.

in bulk as manufactured, and then conveyed back to the plant for packing, as desired for shipment.

The bins are all of steel and, with the exception of the crushed lime bin, are all supported on latticed columns. All the elevators are incased in steel and are of the chain bucket type. The conveyors are of the screw type and work in steel troughs. The main shafting is supported on concrete piers and clutches are used to make the operation of the plant more flexible (see Fig. 4). The hydrated lime plant can be operated at its full capacity with but five men, and it is believed that for quality of product and ease of operation it will not be surpassed by any hydrated lime plant in the country.

All plans and specifications for the hydrated lime

plant were prepared by Richard K. Meade, chemical, mechanical and industrial engineer, 202 North Calvert street, Baltimore, Md., who also drew plans for the general arrangement of the entire plant, selected the mill site, prospected the stone deposits, etc. The construction work was in charge of Ambrose Allen, superintendent of the plant. The other officers of the company are Paul M. Pierson, president, Scarborough-on-Hudson, N. Y., and W. C. Smith, treasurer, Dover Plains, N. Y.

The company has shipped a large amount of hydrated lime since the plant was placed in operation, and this has been highly praised by contractors and builders who have tried it in their work.

## The Pitting of Lime Plaster

Caused By Calcium Oxide (Lime), Which Has Been Fused to a Clinker by Calcium Silicate, Calcium Aluminate, Calcium Ferrate at Higher Temperature in the Kiln, from Clay Contamination.

BY ALBERT ZIMMERMAN.

The darker particles to be seen in the spots of a finish-coat of lime plaster after it has become pitted are composed of calcium silicate, calcium aluminate, calcium ferrate and free lime, which before the pitting were mixed in the form of a clinkered mass, caused by the mixing of the lime with the silicate and aluminate and ferrate of calcium, when in a state of fusion in the kiln, enclosing the lime firmly, and in this fused mass the lime is not hydrated by the methods in practice for slaking or hydrating, but by long exposure to air the lime very slowly air slakes, with gradual expansion or swelling with the final pitting or popping, depending upon the proportion of free lime which the fused mass contains.

The effect is similar as observed in cement, when it contains free lime, but to a lesser degree and somewhat different form. Cement is composed of calcium silicate and aluminate and when it contains free lime it will be unsound, and causes the cement to expand or blow and crack. The lime having been intimately mixed with the silicate and aluminate of calcium while in a state of fusion and hardened to a firm clinker, is but slowly

released to form hydrate in the wetted cement and the hydration continues after the cement has set and causes the expansion, and this is much reduced by a finer subdivision of the cement, which allows of freer access of the water to the lime.

The silicate, aluminate and ferrate of calcium are formed from a mixture of lime and clay when the temperature reaches to between 2,500° and 2,700° F. At the lower temperature the calcium aluminate is in a state of fusion, and the calcium ferrate is fusible at a somewhat lower temperature than 2,500° F., and when in a state of fusion they flux the lime.

The clay is derived from various sources. It may be in the limestone in the form of small pockets or veins, but the fluxing is only near the surface, as the heat which penetrates the average lump of lime is not sufficiently high to flux the clay with the lime in the interior of the lump. Clay sometimes adheres to the surface of the stone when it is charged to the kiln, and if this remains in contact with the surface of the lime, when it reaches a temperature sufficiently high it will flux with the

lime. Clay is also derived from the ashes of coal, and in kilns that are fired with coal the lime as it passes the eyes of the furnace may become fluxed with the cinders or ash, which consists chiefly of silicate of alumina. Clay may also be derived from fire brick and the clay used for making the joints for these brick.

Sand at times finds its way into the kiln and this may flux with the lime to form silicate of calcium if the temperature reaches 2,700° F.

These higher temperatures to bring about the reactions referred to may be obtained in the kiln at the eyes of the furnace or in the burning zone of a gas-fired kiln, in both cases where the lime has been completely burnt and is left in the burning zone to accumulate more heat by continued heating after the carbon dioxide has all been expelled, which will bring about the reaction between the lime and the clay, through which the lime will be over-burnt, the overburning of the lime being caused by the silica and alumina and also oxide of iron fluxing with the lime.

The color of the clinkered lime varies according to the amount of ferrie oxide it contains, and with a smaller percentage of iron content it may be so light in color that it requires very close observation to distinguish between the pitting substance and the plaster, for when it has been air slaked it is very much lighter in color.

The rapidity with which the pitting takes place is dependant upon the proportion of silicate, aluminate and ferrate to that of free lime. As these increase in proportion the slower will be the air slaking, until it reaches a point when there is no longer any free lime present, all the lime existing in combination as silicate, aluminate and ferrate, and this form is indicated in No. 5 of the analysis of the different specimens, where there is an excess of the silica, alumina and ferric oxide to that of the lime, and this will not air slake and does not cause pitting.

The observations of the pitting action of this clinkered lime were made by crushing it to a fineness to pass between 20 and 40 mesh, and mixing this with lump lime putty or a putty made with hydrated lime, to be applied as a finishing plaster coat. Control panels were also made of the same lime and hydrate without the addition of this pitting substance, to check the pitting action of the portion to which the pitting substance was added. The pitting usually commences in about four weeks after the application of the plaster has been made and proceeds very slowly, the surface of the plaster becoming gradually more and more pitted, which continues for months and even

The clinkered lime will often be found in the form of a coating over a portion of a lump of lime as it comes from the kiln, and also discharged from the kiln in smaller solid clinkers, is generally of a darker brown color, darker than the lime, but at times it is also very light in color, when it contains but little ferric oxide, and when black oxide of iron is present, it has a black tint. Overburnt lime is nothing more than lime which has been slightly fluxed by the formation of silicate, aluminate and ferrate of calcium, the extent of this being easily recognized by its hardness and depth in color, which increases with the extent of the fluxing action, and which to its extreme is clinker-like.

The following analyses are made of different clinkers, and give the percentage of silica, alumina and iron oxide which are in combination with lime as silicate, aluminate and ferrate of calcium, the remainder consisting of calcium oxide, with smaller proportion of magnesium oxide.

| proportion of magnesium oxide. | Per Cent. |
|--------------------------------|-----------|
| Silica                         | 0.93      |
| Alumina                        | 1.11      |
| Iron oxide                     | .88       |
| No. 2.                         |           |
| Silica                         | 1.00      |
| Alumina                        | 2.50      |
| Iron oxide                     | 1.39      |

|            |       |
|------------|-------|
| No. 3.     |       |
| Silica     | 1.95  |
| Alumina    | 4.09  |
| Iron oxide | .75   |
| No. 4.     |       |
| Silica     | 1.80  |
| Alumina    | 4.52  |
| Iron oxide | 1.60  |
| No. 5.     |       |
| Silica     | 30.75 |
| Alumina    | 20.95 |
| Iron oxide | 5.43  |

All the specimens, with the exception of No. 5, will very slowly air slake on exposure to air, requiring about six weeks before any change in the way of crumbling can be noticed, and with longer time they very slowly disintegrate to a coarse powder. No. 5 has the lime all combined with the silica, alumina and ferric oxide, with an excess of these, and this will not slake and will not pit.

It has been assumed that the silica, alumina and iron exist as tricalcium silicate (3 CaO. SiO<sub>2</sub>), dicalcium aluminate (2 CaO. Al<sub>2</sub>O<sub>3</sub>), tricalcium ferrate (3 CaO. Fe<sub>2</sub>O<sub>3</sub>), from the more recent investigations of Campbell, White, Shepherd and Rankin in connection with the formation of these compounds.

The finer the subdivision of this fluxed lime, the more exposed the lime will be to the action of air or water, and the more rapid the slaking process will proceed, which will allow a greater portion of this lime to slake during the process of hydration, and with a greater subdivision of the particles remaining unslaked they are so finely subdivided that pitting is not perceptible. The more recent observations made with hydrated lime, have shown that a finer grinding prevents any perceptible pitting.

Warren E. Emley, of the United States Bureau of Standards, has discovered the effect of a partly slaked lime, in the form of oxyhydrate, to also cause pitting, which is due to the lime being in a form which resists hydration and causes pitting. The resistance to slaking of the oxyhydrate of lime is much less than with the clinkered lime, and the pitting caused by the oxyhydrate will follow very soon after the plaster has been applied, while with the clinkered lime the pitting is developed very much slower and passes through a very much longer period, before the pitting entirely ceases.

#### WATERTOWN HAS NEW LIME COMPANY.

Francis K. Purcell, of Watertown, N. Y.; Lewis B. Lindsmuth, of Natural Bridge, and Roy P. M. Davis, of Harrisburg, Pa., are directors of the Basic Refractories Corporation, which filed a certificate of incorporation March 19 with the secretary of state at Albany, N. Y. The company is located at Natural Bridge and is to engage in the manufacture of "basic refractory material" or lime. It is capitalized at \$25,000.

The company is at present negotiating to take over the plant and property at Natural Bridge of the bankrupt New York Lime Co., and if the negotiations succeed will continue the operation of the quarries and kilns of that concern. Otherwise its own plant will be established. Mr. Purcell stated recently that the new corporation plans to operate a 200-ton plant. The capacity of the New York Lime Co.'s plant was 30 tons daily.

The Goose Creek Lime Works, of Middlesburg, Va., has been incorporated with a capital stock of \$25,000; D. C. Sands, Jr., president; Otto Furr, secretary.

The Callison-Price Stone & Lime Co. has been incorporated at Middlesboro, Ohio, with a capital of \$15,000. The incorporators are M. L. Callison, R. N. Price and W. R. Pool.

Boston, Mass., April 19.—Demand is heavy for time just now, particularly within the city boundaries. There is a good bit of what is termed in the local trade "shantywork" just coming through. Dorchester is a district particularly active where small

stores and houses in clusters of 10 and 12 abound. One cluster of 16 small buildings of this nature is going up on the line of a cemetery. Larger works are pressing deliveries, too. The high school of commerce is slacking 100 barrels a day. The State House annex is using 2,500 barrels and Salem is using large quantities of this sort of supply.

Corwin D. Smith, president of the Basic Products Co., Inc., of Seattle, Wash., in a recent communication, stated: "We are developing our hydrating plant along a progressive line which the markets of the Pacific coast call for. We manufacture a line of prepared mortars for mason work and for plastering, both neat and sanded goods, exterior stuccos, cold water paints, and calcimines in various tints from our basic materials. This development is in line with suggestions that have been developed from time to time in our discussion of the growth of the hydrating branch of the lime industry, and shows that the enterprising West coast spirit is among the first to develop practical results in a commercial way from the boundless possibilities that the more intelligent production of lime has thrown open to developments in the immediate future.

W. R. Fuller, of Tampa, Fla., has organized a company to mine and market agricultural lime; Lowry & Barns, agents, Plant City, Fla.

John F. Groth, a pioneer lime manufacturer of Wisconsin, who operated a large lime kiln at Cedarburg, Wis., for many years, recently died at his home in Milwaukee at the age of 74 years. Mr. Groth is survived by his widow, four sons and five daughters.

Lobdell Brothers have begun blasting the old Nichols lime ledge at Wood Hill, near Elizabethtown, N. Y., preparatory to the starting of grinding lime for agricultural purposes. Ground lime at Westport station costs \$6 a ton, but it is figured that it can sell much less at Elizabethtown because of the shorter haul. An engine of 125 horsepower has been set up to provide power for the lime mill near Elizabethtown.

The Clinchfield Lime Co. has been incorporated at Fletcher, N. C., with a capital of \$25,000. The incorporators are W. E. Poteat, A. M. Field, P. R. Moale and J. W. Grimes.

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# With the QUARRIES

## Getting the Value for the Tax Dollar

Highway improvements have come to be considered just about the most important feature of internal improvements. During the past winter practically every one of the state legislatures did some work and made distinct progress in betterments of the road laws. Every member of every legislature is alive to the conviction of the public mind that real good and durable road work must be provided as fast as the money can be found to pay the contractors. There is no longer any doubt or hesitation as to whether the roads are needed or wanted; it is merely a matter of getting the details worked out as to the type of road to be employed and the specific method of taxation by which the payment money shall be raised.

The building of a road is an intensely practical proposition in all of its details and the law makers and county officials are actually the purchasers for the public of vast tonnages of material and a large amount of labor. Their problem is to secure for the public the maximum efficiency in permanent road investment for the tax dollar expended in its purchase.

This is not an easy problem to calculate because no two road projects resemble one another with any degree of similarity. Even in cases where figures are made upon the basis of very careful inspection of the traffic and estimates of the tonnage carried out to a nicety, the whole calculation fails as soon as the new road is completed because it attracts to itself tremendous increases of tonnage and previous traffic becomes a negligible minimum. In such a case the regret is at once expressed that such road had not been built of a better type. The efficiency of the tax dollar does not mean the largest amount of new road surface completed per dollar of cost; in fact, this is very seldom the case.

Someone has said that experience has developed a knowledge that an improved road immediately doubles the traffic the same road carried before improvement. Probably in 10 years' time this amount of traffic will be doubled again by the growth of the community and the increased intensity with which roads will be used after a better average of roads have been constructed throughout the country. Hence, in figuring upon the basis stated above, it would not be out of the way to figure the probable traffic in tonnage of the road that is under contemplation for improvement by four times its performance in its present condition. This would take care of the immediate need for the new road and provide for expected expansion of traffic for 10 years to come.

No road improvement should be considered which does not provide for the expected traffic of 10 years hence, for clearly that would be a disregard of the value of the tax dollar as an investment, because the future is paying for the improvements and hence should have the use of it, with all of the benefits that the project insures.

Without a doubt the best kind of road that man can devise is none too good, provided the community is able to pay for it. Laying aside all contentions as to which of the types of good roads is the best—and there are several acknowledged to be good and durable, and well worth the money they cost—the decision for the improved road must be bounded by the money available for its construction, and no less. The maximum amount of money avail-

able should be spent upon every road improvement and all of the money spent upon the road itself, with the concentration of all of the intelligence at the command of the local road authorities, working under the state laws.

Recently discussing such a matter with a prominent material man who operates crushers in the state of Illinois, and who happened at the time to have several contracts of penetration method roads, he said: "In our county a levy of one mill has been added for road improvements and I was myself surprised to find that such a levy really provides for the three main market roads of the county. Practically every farm in the county is within a mile or two of one of the other of these three main market roads, and in reply to the land owners' contention that the levy of one mill for 10 years made that much more taxes he figured it out and found that the farmer in question would be paying under the one mill levy just \$2.40 a year, or less than \$25.00 for the whole 10 years.

Now that particular farmer is located one mile from the first of the fine new penetration method main market roads of that county, with a six-mile stretch on the improved road itself to the county seat and principal market town of the county. Had the road improvement been completed previous to last July, when this farmer cut his oats, he could easily have saved nine days with three teams upon the cost of hauling, worth \$100 to him upon the least calculation that could be applied in such a case. It appears that at the end of the conversation here referred to the farmer who thought he saw an additional burden of taxes was very well satisfied.

This is an example of very well spent tax dollars. There is practically no limit to the amount of money available for road improvements where such results can be exhibited. Probably such exhibits can be worked out in connection with a large majority of the road projects of every county where the intelligent location of the road is given the right consideration.

It is a good plan to learn how to figure these kind of road assets.

### Pacific Coast Quarries Busy.

The Daniel Contracting Co., of San Francisco, which is supplying the rock for the San Francisco sea wall and for the Key Route pier on the east side of San Francisco Bay, is enlarging the crushing capacity of its quarry at McNear's Point. It is putting in a 36-by-24-inch jaw crusher and a No. 7½ elevator, as well as 48-inch-by-16-feet screens, all motor driven. The new equipment is from the works of the Power Mining Machinery Co. This company is now operating a 70-ton steam shovel and three dinky locomotives and has a capacity of about 1,000 tons daily.

Lynn S. Atkinson, of Los Angeles, Cal., who has secured some large contracts in Kern County, Cal., has bought eight seven-cubic yard square Koppel dump cars, and is in the market for some more machinery.

The West Coast Engineering Co., of San Diego, Cal., which has secured contracts for a lot of street work is in the market for quarry and road machinery.

The California Portland Cement Co., of Los

Angeles, Cal., which is getting ready for some extensive work at Colton, Cal., has plans to install an 84-by-66-inch jaw crusher and some No. 9 gyratory crushers, together with 60-inch screens and a large amount of conveying machinery.

The Hydraulic Brick Co., of Klamath Falls, Ore., which operates extensively in sand and gravel in southern Oregon and the extreme northern part of California, is now preparing to install rock crushing machinery at its plant in Northern California. A complete crushing plant, including a No. 5 Austin crusher and screens will be installed.

The Mission Alaska Quarry Co. has been incorporated in San Francisco.

The Geijsbeek Engineering Co., of Portland, Ore., has secured the agency for the Pacific Northwest for the rock crushing, grinding and screening machinery of the Sturtevant Mill Co., of Boston.

Parrot & Co., handlers of quarry and road machinery, have on display at the Machinery building at the Panama-Pacific Exposition, San Francisco, Cal., a lot of machinery, including concrete mixers and other concrete and road machinery.

The Henry Cowell Lime & Cement Co., of San Francisco, is preparing to increase the capacity of its quarries near Placerville, in El Dorado county, Cal., under the management of Fred Dixon.

The tug Alexander of the Pacific Engineering & Construction Co., of Eureka, Cal., has been put to work carrying rock from the company's quarry on Humboldt Bay to the harbor entrance, where the government jetty is being built.

The Mission-Alaska Quarry Co. has been incorporated in San Francisco with a capital stock of \$100,000, of which amount \$10,000 has been subscribed by G. M. Eastman, W. C. Wyckoff, F. H. Hurlburt, J. R. Schroeder and E. R. Dehay.

### PENNSYLVANIA QUARRY ITEMS.

Philadelphia, Pa., April 20.—A. L. Detweiler, Joseph D. Morelli and Emanuel Nageli, Jr., announce that they will in the near future apply for a charter for an intended corporation to be called the Temple Slag Co., the purpose and object of which is to buy, sell, prepare, crush, manufacture, haul and deal in stone, slag and kindred products and by-products.

The Cambria Limestone Co. has put a force of men at work in the mines testing out the machinery which was recently installed. It is the intention of the company to mine all their stone from now on and extensive preparations have been made along this line. The foundation walls for the new crusher have been completed and the new structural steel work will be started within a short space of time.

The Dauphin county (Pa.) court recently dismissed appeals of two stone companies from settlement of state taxes on the ground that capital invested in such business cannot be exempted from state tax. About \$2,500 was involved.

The Ozark Stone Products Co., a new company composed of Chicago interests, has purchased a 100-acre limestone quarry at Ozark, Mackinac county, Mich. The nature of the Ozark product is said to make it extremely valuable. The new company will enlarge the crushing plant to a capacity to meet the demands and expects to be able to begin shipping this spring. It will ship from 1,000 to 1,200 tons daily at first and more if the demand warrants. The limestone is to be transferred to boats from cars at St. Ignace.

## Increasing Demand for Large Crushers.

Officers of the Power & Mining Machinery Co., 115 Broadway, New York, report that they have built a 60-inch by 84-inch receiving opening jaw crusher for the Bethlehem Chile Iron Mines, sectionalized to a 30,000-pound limit to facilitate handling at destination. The total weight being 525,500 pounds.

The service in this instance is particularly severe as the compressive strength of Toledo iron ore is close to 44,000 pounds per square inch, compared to hard trap rock of the United States, variously estimated at 35,000 to 40,000 pounds. Immediately following this initial breaker and taking the 10-inch product from it, there will be installed three No. 9 McCully all-steel gyratory breakers.

This company has recently shipped a 66-inch by 84-inch receiving opening jaw crusher to a company on the Pacific coast and is putting through the shops at the present time another of the same size, which will also be shipped to the far West.

The construction is all steel, the pitman being spring supported to relieve the bearings of its weight, the bearings are steel bush lined with babbitt, automatically lubricated and water cooled. It is stated that the first 60-inch by 84-inch machine of this type built for the Birdsboro Stone Co., Birdsboro, Pa., and installed five years ago, demonstrated these and other features to be so successful that they have been embodied in all subsequent machines. Approximately two million tons of trap rock have been put through this crusher with no expense for repairs, other than renewal of the lower tier of crushing plates.

## Quarry News in Brief.

The Allen S. Davidson Co., which represents the Cambria Limestone Co., in Pittsburgh, Pa., is working its quarry at Wampum, Pa., to full capacity. This concern was very fortunate in getting a big block of the stone material which was recently advertised for by the commissioners of Allegheny county.

The Consolidated Stone & Mining Co., Farmers' Bank building, Pittsburgh, Pa., reports its quarries running fairly well on sand stock. Very little limestone is being produced. It reports competition keen and prices accordingly low.

The Steubenville Stone Co., of Steubenville, Ohio, has completed plans for a four-story reinforced concrete warehouse 31x140 feet.

The Ellwood Stone Co. has orders enough on its books to keep it busy for two months at its plant in Ellwood City, Pa. Its officials report that many of the small quarries in that district have been obliged to go out of business the past few years because of the sharp competition with the big and well-equipped concerns. The railroads also have discontinued nearly all buying of rip-rap stuff and are now taking only a little bridge and rubble stone.

The last car of machinery for the new crushing plant of the Wisconsin Granite Co. at Red Granite, Wis., has been installed and the plant has been placed in operation.

G. O. Farber, of Arcadia, Wis., has erected a new rock crushing plant at Trempealeau, Wis., and has started work at the limestone quarries near that city.

The Trap Rock Co., operating one of the largest rock crushing plants in northwestern Wisconsin, has placed its plant at Dresser Junction, near St. Croix Falls, in operation. The company claims that its initial crusher is one of the largest in the world, having an opening five by seven feet. John Wunder, a pioneer in the stone crushing business, is general manager, while K. E. Casparis is in charge of the operating.

The Upper Hudson Stone Co., with offices at 26 Cortlandt street, New York, has just finished remodeling and modernizing its plant at Rockland Lake. A new metal jaw crusher has been installed, perhaps the largest in use in that district, and it has installed many other new pieces of equipment that have combined to increase the capacity of this plant about 50 per cent. James G. Shaw, local manager, says that the general outlook for crushed stone is most favorable and he anticipates that the increased capacity of the Rockland Lake plant will give him greater facilities for supplying the growing demand for crushed stone in the New York City market.

Contractor Frank Mowen, Chambersburg, Pa., will go into the stone crushing business in connection with his cement trade. He has purchased the Minick tract, south of town, containing about two and one-half acres. This land is underlaid with a high grade of limestone. Mr. Mowen will put in operation on the tract an up-to-date crushing outfit which will be operated by a large gasoline engine. He has men at work at the present time putting up bins for the different sizes of stones that he will crush. Mr. Mowen has already received several large orders for stone for the coming summer months.

Demonstrations have been staged on several farms in Hamilton County, Ohio, recently, showing the use and value of crushed lime-stone as a fertilizer and soil-improver. The Hamilton County agricultural agent, working with the Ohio Experiment Station, had charge of the demonstrations, which were attended in every instance by large numbers of farmers.

The Greer Limestone Co. is arranging to spend \$25,000 for building a limestone crushing plant on the Morgantown & Kingwood Railroad near Morgantown, W. Va., H. C. Greer, of Pittsburgh, will be president of the company.

The Allis-Chalmers Co., Milwaukee, Wis., have received a contract from the Carbon Limestone Co. for machinery equipment at the plant at Birmingham, Ala.

James L. Vance & Co., Chilhowie, Va., are contemplating the installation of a limestone and bone pulverizer.

## RECENT INCORPORATIONS.

Vennango Valley Limestone Co., Oil City, Pa.; \$3,000 capital; to quarry limestone; directors, David C. Dale and Mildred Dale, Oil City, Pa.; George H. McCandles, Oakmont, Pa.

Wabash Stone Co., of St. Louis, Mo.; capital \$2,000; incorporators, John T. Elliott, S. S. Stone and Alex. Thom.

Hoosier Stone Products Co., Indianapolis, Ind.; \$25,000; to operate quarries, etc.; B. W. Helman, R. M. Bristor, George P. Steinmetz.

Maryland Trap Rock Co., Havre de Grace, Md.; capital, \$50,000; P. T. Harper, president and treasurer; E. M. Good, vice-president and manager, and Jos. Good, secretary. Will develop 50 acres; daily capacity, 1,000 tons.

Callison-Price Stone & Lime Co., Middlesboro, Ky.; capital, \$15,000; M. S. Callison, R. N. Price and W. R. Pool.

Tomahawk Crushed Rock & Gravel Co.; H. G. Foster and others; Tomahawk, Wis.

National Quarries Co., Carey, O.; capital, \$100,000; C. G. Spencer and others.

The Virginia Granite Corporation has been chartered with a capital of \$100,000 to operate a quarry near Richmond, Va. In addition to manufacturing building stone, a crushing plant will be operated. Frank H. Hunter, of Richmond, is president.

The People's Crushed Stone Co. has been incorporated at Chicago with a capital of \$50,000. Incorporators are J. C. Buckbee, Austin Cole and C. P. King.

## Kentucky Anticipates Busy Year.

Louisville, Ky., April 19.—The rock crushers and quarries of Kentucky will be very busy this year from present prospects for road building. It is estimated that road building operations will be more extensive in the state this season than for several years past, due largely to the state-aid plan which will be used in building a number of the pikes. Concrete work will also call for a large supply of crushed stone.

The Hardin county fiscal court, of Elizabethtown, Ky., at an extra session, contracted with the Brown-Goodin Quarry Co., at Upton, Ky., for 10,700 yards of crushed stone to rebuild the old L & N. pike, better known as the Lincoln and Jackson way. The price was 55 cents a square yard and the rock will be delivered at Glendale, Elizabethtown, Sonora and Upton. At a meeting of the court on April 20 contracts were let to build the entire Lincoln way from West Point to Upton, a distance of 40 miles, except such parts as are built or are now under way.

J. Henry Taylor, mayor of Livermore, Ky., has asked for sealed bids for 1,000 yards of limestone ballast delivered f. o. b. cars or wharf at Livermore.

A. W. Sears, Wilbur Sears and Frank Hahn, of Shopville, Ky., have purchased a rock crusher which has been placed in operation. The machine has a capacity of 15 tons daily.

The Webster Stone Co., of Irvington, Ky., has installed two 2,500-pound boilers to enable them to take care of the big rush of orders now being received. Orders for 31 cars of stone were received at the recent interstate convention held at Evansville, Ind.

The Howard-Cooper Corporation, of Portland, Ore., reports the sale of five Fort Wayne crushers, a Monarch road roller, a number of graders and a carload of metal culverts to Bonner county, Idaho.

## INTERESTING PUBLIC OFFICIALS.

For the purpose of placing standard specifications for macadam roadways in the hands of every public official, members of the Indiana Crushed Stone Association are conducting a campaign of publicity which is calling to the attention of highway commissioners, engineers and others the satisfaction given by macadam roads when properly constructed. The first piece of literature sent out by the association is in the shape of a folder on the face of which, in addition to the name and address of the recipient, are the words: "Mr. Public Official—it will pay you in the long run." Beneath these words are shown public officials running toward a member of the association who is pointing toward an arrow directing attention to the contents of the folder.

## SAYS PRINTER'S INK BUILDS ROADS.

"To the wonderful success of the automobile industry, road improvement has been a contributing factor second only to printer's ink," says President George A. Kissel of the KisselKar. "Why place advertising first? Because it made people want cars. And the ownership of cars made them want better roads to drive on. The sentiment in favor of good roads would never have reached its present almost unanimous proportions but for the persistent agitation of those who used them for pleasure. Tradesmen in the towns and cities have found that good roads increase their zone of trade. Farmers find their markets easier to reach. Doctors get to their patients quicker. Rural free mail delivery never would have been accomplished under the highway conditions of former days."

The Kissel Motor Car Co. reports that by far more Kissel trucks have been sold during the first quarter of 1915 than in any corresponding period of previous years. This refers to trucks for domestic use, without regard to those shipped abroad.

# GYPSUM PRODUCTS

## Quarrying Operations of Canadian Gypsum Plants

L. H. Cole has recently prepared for the Canadian Department of Mines an extensive treatise on "Gypsum in Canada," dealing in detail with its occurrence, exploitation and technology. In the chapter on "Method of Quarrying and Mining," he graphically explains the problems usually confronted and, wherever possible, suggests remedies. His words, in part, are as follows:

The consideration of the best means of the exploitation of gypsum is a matter which, up to the present time, has not been a serious factor in the development of a deposit. In the Maritime provinces, and also in the West, the largest deposits of gypsum are all comparatively near the surface, with only a covering of loose material which can easily be removed, but which would not hold up if undermined. Consequently, the only method in most cases is to remove the gypsum by open quarries. This method has a number of advantages over underground mining, which have been greatly to the benefit of the gypsum operators. These advantages may be briefly stated as follows:

(1) Easier supervision. A better idea can be obtained of the class of material that is being quarried.

(2) Better ventilation, as the men are always working in the open air.

(3) Easier handling of the gypsum.

(4) No timbering is necessary, and all the material can be extracted, as no pillars have to be left.

Its disadvantages are few, the principal one being the exposure to all the different kinds of weather, thus hindering the work, and the danger of exposure of the men to heavy rain, snow or extreme cold.

### Quarry Work.

As a rule most of the quarries operating in gypsum have no regular shape, and nowhere does any systematic method seem to have been employed. It has generally been a case of taking the gypsum from wherever it occurred, without any regard to future economy in working. In consequence many of the quarries are just a series of pot holes, with no two parts of the quarries alike. Thus much time is lost by the repeated handling of the gypsum, when in many cases one handling would be sufficient.

The present practice is to obtain as high a face as possible of clean gypsum, and to break it down by caving. This is accomplished by drilling the lower part of the face with auger and hand-power drills, and then blasting the holes with a low-power dynamite, generally about 40 per cent strength. This brings down large tonnage of gypsum, which is then broken up by hand sledge-hammers to a convenient size for handling. The broken material is hand picked, so as to remove any pieces of anhydrite or foreign matter, and is loaded into small cars or dump carts and hauled either to the mill or wharf direct, or else where there is a railway line, to the nearest siding, where it is dumped into the railway cars.

In the gypsum deposits of northern Manitoba, a steam shovel is being employed successfully to handle the gypsum, thus doing away with the excessive handling which is so frequently met with in gypsum practice throughout the country. After the surface is stripped, the gypsum, which is of a soft variety, is drilled by a series of vertical holes

placed regularly at eight feet intervals across the working face of the deposit. These holes, when blasted, shatter the gypsum sufficiently so that it can be handled by the steam shovel directly into the standard railway cars, standing on a siding beside the shovel. This method is found to be cheap and economical, and enables a large tonnage to be got out in a very short time.

In all of the gypsum quarries in Canada, the drilling is accomplished by hand-power, one-man auger drills, similar to those employed in coal mining practice. They are found to work very successfully, as the gypsum is soft and drills easily. No attempt seems to have been made to install power drills of any sort.

### Mining Methods.

Where the overburden is excessive, and consists of a rock capping over the gypsum beds, the deposits are generally operated by underground methods. On account of the small price obtainable for the gypsum, the simplest and cheapest methods have to be employed. The present practice in Canada in gypsum mines seems to be to open up the deposit by an incline tunnel, generally at a slope of 15 to 20 degrees. Why this special method of entrance has been adopted in preference to a vertical shaft is not clear. In the earliest gypsum operations in the country, the deposits were opened up in this manner, and the custom has been to follow the example of these first attempts.

When the bed of gypsum has been reached, main haulage ways are laid out, and the gypsum is recovered by a room and pillar system similar to that employed in coal mines. Tracks are laid to the face in these chambers, and the broken gypsum is loaded directly into cars, which are then taken by hand, or horses, to the main haulage way, where they are made up into trains preparatory to being hauled up the incline by a small hoist. Considerable loss is caused by the fact that the pillars in most cases are composed of good gypsum, which would otherwise be recovered.

### Transportation Facilities in Quarries.

Transportation facilities in the quarries are of the simplest nature. In most of the operating quarries in the East, the broken gypsum is loaded by hand into single horse Scotch carts, and taken by them either to the shipping pier, or to the nearest railway siding. This necessitates a great deal of extra and useless handling of the rock before it reaches its final destination. Much time and labor might be saved if a system of radiating tracks were laid through the quarry, and the cars loaded directly at the face.

The method of transporting the loaded material from the quarry to the mill or shipping pier, is, in most cases, by narrow gauge railways, and this affords easy and cheap handling.

Gypsum quarries, as a rule, are seldom troubled with water, but in some places, especially where the level of the floor of the quarry is near the level of the water table of the surrounding country, the problem of handling the water has to be taken into consideration. In this case a sump is located in the lowest part of the quarry, into which all the water collects, and a small duplex pump, generally stationed somewhere well protected from the blasting, is sufficient, being operated only a few hours each day, to handle all the drainage from the whole

quarry. In cases where the quarry is below the drainage level of the surrounding country a larger pumping plant has to be installed.

### MOTOR TRUCK SALES UNSURPASSED.

Without referring to foreign orders for motor trucks the manufacturers of the KisselKar truck claim that the factory at Hartford, Wis., is enjoying the best business of its career in this department. The output of motor trucks far surpasses that of past years or the expectations for this year.

G. P. Pearson of the Kissel Motor Car Co. calls attention to the difference between the English and American terms when speaking of motor fuel and motor trucks. Instead of using the word "gasoline" the English designate all fuel "petrol."

### SCHEDULE OF BASEBALL GAMES.

Believing that all of their patrons and friends should find enough time to visit one or more baseball games during the summer season, the officers of A. Leschen & Sons Rope Co., St. Louis, Mo., are presenting them with a neat little celluloid card containing a list of the games of the National and American league. The information is complete and will prove a handy guide to baseball fans.

John M. Sherrerd, M. Amer. Soc. C. E., M. Amer. Soc. M. E., M. Amer. Inst. Mining Eng'rs, died at his home in Easton, Pa., April 15. Mr. Sherrerd was a graduate of Rensselaer Polytechnic Institute and a member of Phi Beta Kappa. At the time of his death he held the position of assistant to the president of the Kennedy-Stroh Corporation, Pittsburgh, Pa. Before its absorption by the afore-mentioned concern he was secretary of the Stroh Steel Hardening Process Co., of Pittsburgh. Prior to his connection with the Stroh interests, Mr. Sherrerd was for 18 years the sales manager of the Taylor-Whar-ton Iron & Steel Co., High Bridge, N. J.

### STATEMENT OF OWNERSHIP OF ROCK PRODUCTS AND BUILDING MATERIALS.

(Required by Act of Congress, Aug. 24, 1912.)  
ROCK PRODUCTS AND BUILDING MATERIALS is published semi-monthly at Chicago, Ill.

Editors, E. H. Defebaugh and F. K. Irvine, 537 South Dearborn street, Chicago.

Managing editor, F. K. Irvine, 537 South Dearborn street, Chicago.

Business manager, E. H. Defebaugh, 537 South Dearborn street, Chicago.

Publisher, Francis Publishing Co., 537 South Dearborn street, Chicago.

Owners: E. H. Defebaugh, 537 South Dearborn street, Chicago.

F. K. Irvine, 537 South Dearborn street, Chicago.

G. A. Olsen, 537 South Dearborn street, Chicago.

Estate of W. A. McCall, 537 South Dearborn street, Chicago.

Known bondholders, mortgagees and other security holders, holding 1 per cent or more of total amount of bonds, mortgages or other securities: None.

E. H. DEFEBAUGH, President.  
Sworn to and subscribed before me this twenty-second day of March, 1915.

JAMES S. PENNINGTON, Notary Public.  
My commission expires October 24, 1916.

# SAND and GRAVEL

## Good Season Ahead.

Louisville, Ky., April 19—Early building in Louisville was resumed on so much larger proportions than expected that the sand and gravel concerns in some cases have found supplies getting a little light and they are getting ready to start digging from the river again. The river has dropped sufficiently so that dredging will not be interfered with and it is now warm enough to keep sand and gravel from freezing in the scows. The outlook is excellent, from all reports, and the season will prove a good one.

John M. Settle, of the Ohio River Sand Co., will start digging next week after a lay-off of about two months. The equipment is in fine shape and no new machinery will be purchased for the time being. Stock is rather low and as the company is delivering on three big jobs and a number of little ones, action had to be resumed. The three big jobs are the new \$100,000 Bernheim building, the concrete building of the J. F. Kurfess Paint Co. and the Tiller apartments. Mr. Settle has just announced receiving what promises to be one of the best contracts for sand and gravel to be let this spring. This order is for about 10,000 yards of sand and gravel, which will be used in constructing an assembling plant for the Ford Motor Co. The W. E. Wood Co., of Detroit, Mich., has been awarded the general contract on the building. The Ohio River Sand Co. has been using a six-ton Garford truck for several months in delivering sand. A new truck, capable of handling five tons, has just been purchased and added to the delivery equipment, which goes to prove what the company thinks of the truck for delivery purposes. The new truck is a Pierce-Arrow, worm driven, and equipped with a hydraulic dumping device.

Joe Lloyd, of the E. T. Slider Co., said that the company would start digging again on April 1 and a new digger would be ready for the flotilla when operations commenced. Mild weather is stirring up business and things are expected to start soon. The company is now making deliveries on the new Bourbon stockyards, the new Boys' High School building, several public school buildings and a number of small jobs. The big job on the Beargrass creek will also require a good deal more material before completion.

The Nugent Sand Co. has dug sand and gravel steadily throughout the winter, in spite of ice, snow, etc. The company has a number of small jobs on hand and is finding business very satisfactory for this season of the year.

## PROMINENT SAND PRODUCER DIES.

James Caven, a widely known builder, contractor and sand producer, died recently at his home, 5914 Overbrook avenue, Philadelphia, Pa., of infirmities. Mr. Caven supplied the sand used in the construction of the filter beds in the Torresdale filtration plant. In recent years he had been president of the National Dredging and Lighterage Co. He is survived by a widow and two children, both sons.

## INVENTS GRAVEL POWER MACHINE.

Edward J. Thielen, 170 Juneau avenue, Milwaukee, has invented a new machine, operated by gravel and intended to store power for use in running machinery on farms. The machinery consists of a

large pit, partly underground, which holds from 50 to 100 tons of gravel, and a storage reservoir on a tower into which the gravel is elevated by means of a bucketed elevator, operated by a wind-driven wheel which surmounts the structure. When the power is needed, the gravel falls through revolving cylinders, which develop the necessary power.

## Unique Method of Handling Sand.

The accompanying picture represents the manner in which the Stewart-Peck Sand Co. of Kansas City, Mo., handles its sand. The cantilever derrick, shown unloading sand into a freight car, is one of eight used at Kansas City. The company has also one in service at Topeka.

The company pumps sand hydraulically from



CANTILEVER DERRICK SAND UNLOADING DOCK.

boats into barges, which are hauled to the dock, where the sand is picked up in buckets by the derrick and dumped on the pile or loaded into cars. The scene is near the foot of Grand avenue, on the Missouri river bank. The company is supplying sand for the Glover building and for the new structure of the Helping Hand institute and has the contract for the new building of the Lechtman Printing Co., at Eighth and May streets, among many other large contracts.

## Many Contracts for Sand.

Boston, Mass., April 19.—Sand concerns opened the season hereabouts with business on hand that, they are a unit in saying, is more than up to prospects.

Noble Maxwell, president of the Boston Sand & Gravel Co., when interviewed on trade conditions for ROCK PRODUCTS AND BUILDING MATERIALS said: "Business conditions are very good. We started our new plant at Scituate, Mass., in full the first of March, with orders ahead for 200,000 tons of sand. Then there is 100,000 tons going into Salem for the big concrete factory construction of the Naumkeag mills, 35,000 tons for the Braves' new ball park and other large developments, aside from the steady run of city and contract building. We have 12 lighters operating and the new plant at Scituate, capacity 5,000 tons a day, which I believe you have already described in your paper, is equipment to meet the situation. The prospects are for a very busy season up to the thick of it in June. Business conditions in general are good, indeed much better than at this time last year, and naturally it is to be hoped that a much better year all around will result."

## General Items of Interest.

Capitalists of Beaver, Pa., have formed a corporation and will remove for commercial purposes the gravel and sand in the bed of French Creek near the Thirteenth street bridge in Franklin, Pa. A plant to have a capacity of 800 tons a day is contemplated. Among those interested are W. H. Forbes, attorney for a Erie Railroad Co., and Emil Koos, agent for D. Grim and others of Beaver, Pa.

B. B. Putnam, president of the Marietta Sand Co., announces that his company has the contract for furnishing 135 carloads of sand and gravel for a concrete bridge at Clarksburg, W. Va. His company is also furnishing an equally large amount to the Pittsburgh Plate Glass Co., of Latrobe, Pa.

The Norfolk & Western Railroad Co. has opened a new gravel pit near Newton, Ohio, with John Reed in charge.

The Rodgers Sand Co., Pittsburgh, Pa., reports business greatly improved. President Rodgers is satisfied that a big boom in business is coming very shortly and that this increase cannot be held off war or no war. "Every one of our boats but one," he says, "is working double turn. We have ordered 15 new steel barges, which have a capacity of 600 tons of sand each. Our teams are very busy and we are doing a big lot of digging in the Ohio river."

The Ohio River Sand Co. reports business just fair. A considerable amount of small work is coming forward in building but big building projects are altogether too few to insure a big summer. The company is shipping considerable sand in earload lots from its big plant at Ambridge, Pa.

F. C. Peck & Son operate a gravel plant at Olathe, Kan., and both father and son are spending much time there now, preparing for the large business opening up. F. C. Peck is a member of the firm of Stewart & Peck, the Kansas City, Mo., sand company, but the gravel pit is a separate enterprise.

Articles of incorporation have been issued to the Central City Sand Co., of Des Moines, Ia. The incorporators are H. A. Harkins, Robert McCollum and C. V. Ray. The company has a capital stock of \$10,000.

The Wisconsin Sand & Gravel Co., of Milwaukee, Wis., was incorporated on April 7 with a capital stock of \$25,000 by Arthur R. Berry, Hazel M. Fox and J. M. Chiequennoi.

George R. Jones, of Beaver, Pa., and others have formed a new company and are arranging to open a big gravel and sand plant at Franklin, Pa. It will have a capacity of about 800 tons a day.

The Mason City Sand & Gravel Co., of Mason City, Ia., are in the act of remodeling their dry screening plant, which they are connecting into a washing plant. It is estimated that the improvements will be finished within the next fortnight.

In a recent issue the Washed Clean Sand & Gravel Co. was credited with a location at Chelsea, Mich., which, according to a communication from George W. Wood, secretary and treasurer of the company, is a mistake. The company's plant is located at Ann Arbor, Mich., where sand and gravel operations for the 1915 season will soon be commenced.

The Kavanaugh Sand Co., of Shelby county, Tenn., has been incorporated with a capital stock of \$40,000. The incorporators are L. T. Kavanaugh, Caruthers Ewing, John W. Harris, Jr., R. S. Keebler and Earl King.

## SAND-LIME BRICK

### Decrease in Output of Sand-Lime Brick.

#### European War Interferes with Building Activities and Checks Production in 1914.

The condition of the sand-lime brick industry in the United States in 1914, according to figures gathered by the United States Geological Survey was, on the whole, not entirely satisfactory to the manufacturers, though in some states, notably in Florida and Indiana, considerable progress was made. The year opened with good prospects for a prosperous season, and many operators reported that these prospects were in a fair way to be realized when conditions arising from the European war put a check to building activities, and from that time forward business was reported poor.

In 1914, the value of the output was \$1,058,512, a decrease in value of \$179,813 compared with 1913. Nine of the 23 States reporting marketed product in 1914 showed increase and 14 showed decrease in output. These increases and decreases were confined to no one section of the country, as Florida, Indiana, South Dakota and Wisconsin showed the principal increases, and California, the District of Columbia, Massachusetts, Michigan, New York, Pennsylvania, Texas, and Washington the largest decreases.

Michigan continues to be the leading state, the value of its product constituting more than 24 per cent of the total value of all sand-lime brick in 1914, and more than 25 per cent of the total in 1913. Minnesota was second in 1914, reporting 11.27 per cent of the total value, and displaced New York, which was third, with 10.17 per cent of the total value.

The average price per thousand for common sand-lime brick was \$5.99 in 1914, compared with \$6.27 in 1913, \$6.46 in 1912, and \$6.09 in 1911. For front brick the average was \$9.08 in 1914 and \$10.61 in 1913.

The sand-lime brick industry has been established in the United States since 1901, when the first plant was started at Michigan City, Ind. Since the time it has passed through the various stages of a new industry. In the beginning it suffered severely from the "boomer," whose glittering promises to make brick for a few dollars a thousand that would sell in competition with high-grade clay face brick caused plants to be established for the manufacture of sand-lime brick without regard to market, transportation facilities, or even a supply of suitable material. Some plants constructed under these conditions never even attempted to market their product. Then came the natural reaction when the number of the plants and the value of the product decreased even more rapidly than commercial conditions would have seemed to warrant. Since that stage, within the last few years, the industry appears to have become firmly established and is now showing a reasonable growth.

#### ROUGH TEXTURE CREATES INTEREST.

The Composite Brick Co., Jacksonville, Fla., writes as follows: "Building conditions in this territory have been exceedingly bad for the past two months and there is practically nothing going on, but the city of Jacksonville has voted a million-dollar school bond issue which will be used for the erection of 16 modern school buildings which are badly needed here and it is expected that with the commencement of their construction things will begin to open up gradually."

"With the introduction of the rough texture fin-

ished base brick which we are making, it has created an interest to a greater degree in sand-lime brick here and we are able to make a greater variety of finishes than can be obtained by the regular tapestry brick, and we have sold several fine mantles and porch and store fronts from this grade of brick, which is impervious and very hard and somewhat cheaper than clay brick."

#### NEW ORLEANS TO HAVE SAND-LIME BRICK PLANT.

New Orleans will get its first sand-lime brick manufacturing establishment in the next few weeks. James H. Dyett of New York is forming the company. He announced a few days ago that a site for a factory had been secured. The concern will be known as the New Orleans Silica Brick Co.

The site consists of 300 feet frontage on the New Basin canal and extending back to make a half-square of ground, and an adjoining piece of land 48 by 100 feet, all between Rempart and Franklin streets.

#### LEASES SAND-LIME BRICK PLANT.

R. W. Borden has recently leased the plant of the Standard Brick & Tile Co., manufacturers of sand-lime brick at Colton, Cal. One of the recent orders received by this company is for 1,000,000 sand-lime brick for a new grammar school.

#### HAMMOND CONCERN INCORPORATED.

Gary Sand-Lime Brick Co., Hammond, Ind., with a capital of \$150,000, has been incorporated. The concern will manufacture brick and kindred products. The directors are George M. Eder, Conrad Peterson and Englehardt Ullrich.

In a recent communication from the San Antonio Sand-Lime Brick Co., San Antonio, Texas, they report the situation in San Antonio as follows: "San Antonio probably contains more sand-lime brick buildings than any other city of its size in America and they range in value from \$1,000,000 structures down to \$2,500 cottages, while almost every chimney in town is now giving sand-lime brick the preference. We expect a good business this year."

#### TRADE LITERATURE.

"Metal Lath Hand Book" is the title of a cloth-bound, descriptive and explanatory catalog issued by the Associated Metal Lath Manufacturers, 812 Wick building, Youngstown, Ohio. Attested records of the fire tests made in Cleveland and at Columbus University under the auspices of the association is the first subject covered. This is followed by illustrations and descriptions of the various kinds of construction in which metal lath is being used to the greatest advantage, including vertical openings, beltways, elevator enclosures, beam and girder protection, column protection, suspended ceilings, partitions of all kinds, corner beads, and plastering instructions and specifications covering lime mortar, gypsum plaster, stuccoed exteriors and many other things of interest which amount to a brief and composite but very thorough education on the subject of the use of the metal lath.

The Northwestern Expanded Metal Co., Old Colony building, Chicago, Ill., has issued an illustrated booklet entitled, "Kno-Burn Expanded Metal Lath." It is profusely illustrated and contains in minute detail perfect specifications for all types of plastering on all kinds of buildings. Some of the information is the best that has ever been produced and has taken a great deal of careful research to collaborate into the booklet. Every part of the construction of a building in which lath can be used in any way is so illustrated and labeled that any practical man can readily see the advantages and economies of using a material which is so well protected with intelligent promotion for the practical guidance of the user.

The Chain-Belt Co., Milwaukee, Wis., has issued a handsomely illustrated catalog devoted to concrete mixers, pavers and handling equipment. Chain-Belt concrete mixers have an established reputation in the trade and have made good upon every variety of concrete work that has ever been undertaken. The Chain-Belt pavers, power driven and provided with an extension boom for road contractors, are given a double-page illustration, showing at once the completeness and simplicity of this big machine. The pavers are not only provided with boom and traveling buckets, but also with swinging chutes so that the mixed concrete can be conveniently spread close up to the machine. Estimates on specifications for road work and for other concrete work according to yardage measurements are carefully worked out for the guidance of contractors who keep cost systems and check their work by every step of the operation. The catalog is completed with a full line of equipment such as hoisting buckets, receiving hoppers, sectional and continuous spouting, and, in fact, every mechanical means for the economical handling of large quantities of rich concrete. There are many supply dealers who would do well to write this concern about their "Rex" low-charging mixer, for it contains a business opportunity for them right now.

The Jeffrey Manufacturing Co., Columbus, Ohio, has just issued a booklet illustrating the uses and advantages of its Century rubber belt conveyors. The Jeffrey line of carrier conveyors and loaders has made good with all types of material, from crushed rock to hydrated lime, making little difference whether material is packed in bags, barrels or loose. The illustrations in this booklet show the integral parts of the construction of pulleys, guides and attachments for special purposes, together with a price list of the parts and the assembled mechanism. The Jeffrey portable belt conveyors have been very effectively used in factories, and in many cases trucking from one department to another has been entirely eliminated by the introduction of some one of the dozen or more types of conveyors built by this concern. The Jeffrey belt elevators are operating in every known material, from corn, wheat, oats and flour to crushed rock, sand, gravel, plaster, lime and cement. If conveying or elevating is costing you money, this booklet contains suggestions that are well worth your sending for it.

The publicity department of the Universal Portland Cement Co., 208 South La Salle street, Chicago, Ill., has issued a manual entitled, "Local Improvements by Special Assessment in Illinois." It is an outlined and detailed process specimen of the necessary procedure for the construction of local improvements in cities, towns and villages in Illinois. This book contains in correct rotation a full list of the necessary legal forms as they should be applied to concrete paving improvements, the blank spaces and italics indicating that part of the forms which vary with each application of the Illinois law governing these improvements. Without a doubt this manual will be of great assistance to local public officials who have road and street improvements to provide for. If carefully followed it will save them litigation, expense and delay.

# CLAY PRODUCTS

## Brick Prices Low.

New York, April 19.—Common brick in this market is selling at prices lower than has featured any year in recent times. A price of \$5.50 is not calculated to give manufacturers much profit, and for that reason shipments have been held back, pending a better upturn to the building situation. There are approximately 300,000,000 common brick in sheds up the Hudson river ready for loading, and the manufacturing season will open this year about May 15, with new brick coming in about the first part of June. Considerable concern exists therefore with reference to the quantity of common brick that will move into construction before the new brick begins to arrive.

The building season, normally starting about March 15, has not even got under way at this writing. Dodge Reports show that not more than 11 per cent of current record-breaking plan filings are actually going ahead in New York, but returns show that 72 per cent are actually on architects' boards for tenders, indicating prompt movement.

## EASTERN PAVING BRICK MEETING.

The annual meeting of the Eastern Paving Brick Manufacturers' Association was held at the Fort Pitt hotel, in Pittsburgh, Pa., March 31. C. E. Foster, of Bradford, Pa., president of the association, presided. In the afternoon the delegates were guests of the officials in charge of the United States Bureau of Standards. The chief speaker of the evening banquet was Prof. Edward Orton, of Ohio State University, and an address was also made by Will P. Blair, secretary of the National Association, of Cleveland, Ohio. Officers for the ensuing year were chosen as follows: President, Charles A. Young, Pittsburgh; first vice president, G. W. Greenwood, Uniontown, Pa.; second vice president, M. S. Gregory, Corning, N. Y.; secretary, G. W. Lenkerd, Indiana, Pa.; treasurer, C. P. Mayer, Bridgeville, Pa.

## TO ADVERTISE CLAY PRODUCTS.

The Canadian Clay Products Bureau has been formed along the lines of the International Clay Products Bureau of Kansas City. Connected with the Bureau are three Ontario sewer pipe companies and one from Quebec. They are each contributing a generous amount towards an advertising scheme. Mr. Ryland N. New of the Hamilton and Toronto Sewer Pipe Co., is president.

The Canadian National Clay Products Association is taking up a joint advertising scheme and will spend an initial amount of \$3,000. The scheme includes the publication and distribution of a pocket-book on clay products.

## PEORIAN HAS BIG BRICK-TILE DISPLAY.

A modern curiosity shop in bricks, tiles and building material has been created by M. Dering in his new show room in the Woolner building, says the Peoria (Ill.) Journal. Mr. Dering claims that his display surpasses those in most of the large cities.

The display shows the bricks and materials as they would appear in a finished building. Mr. Dering points out that the styles in brick change as well as in millinery and waist lines and that he has

an array of the most stylish novelties. He claims that he has something for the man who expects to build a barn and for the most finicky brick connoisseur in the world who is choosing materials for a million-dollar mansion.

## TO FURTHER MATERIAL INTERESTS.

For the purpose of completing the organization of the Oregon Clayworkers' Association, members of the industry in that state met at Salem, Ore., on March 7. This was the second meeting of the organization and was devoted entirely to the perfection of by-laws and plans for the welfare of the brick, tile and sewer pipe men.

Before adjournment a resolution was passed expressing appreciation of the publicity given the movement in the March 7 issue of ROCK PRODUCTS AND BUILDING MATERIALS.

## RECENT INCORPORATIONS.

The Wilkes-Barre and Hazelton Brick Co., Wilkes-Barre, Pa.; capital \$150,000; plant is to be located about a mile and a half outside of Hazelton, where the company has secured 125 acres of shales from which common, face, tapestry and paving brick will be manufactured; president, Joseph G. Schuler; secretary, N. M. Schmitt; treasurer, P. H. Kehoe; members, Hugh L. Campbell, Hazelton; Frank Reiser, White Haven; Miles P. Frey, Pittston; A. Root, P. H. Kehoe, Jacob Schmitt, Jacob Held, W. B. Mowery, N. M. Schmitt, D. H. Evans, A. C. Laning, John Schneider, Joseph G. Schuler, Constant Rowinsky, W. D. Weiss, Gustave A. Lang and O. J. Behrens, of Wilkes-Barre.

The Ferguson Segment Block Co., St. Louis, Mo.; capital stock, \$50,000; W. C. Ferguson, R. S. Rhoades, G. W. Fowler; will manufacture segment sewer blocks, bricks and other clay products.

The Young Manufacturing Co., St. Louis, Mo.; capital stock, \$6,000; J. P. Young, J. J. Woods and E. L. Schroeder; will manufacture kaolin products.

The Hollendale Tile & Brick Co., Hollendale, Wis.; capital stock, \$15,000; F. W. Hall, Estella Rowe and E. H. Whitcomb.

The Shale Manufacturing Co., of Asheville, N. C., which was recently incorporated for \$50,000, has been organized with A. G. Betts, president; J. E. Rector, vice-president and secretary, and A. S. Hurbut, treasurer. The firm has taken over the plant of the Red Shale Brick Co., at Shaleville, N. C., and contemplates installing additional equipment.

The Municipal Shale Brick Co., Martinsburg, W. Va., will be incorporated with \$250,000 capital stock for manufacturing building bricks, vitrified fire-proofing, vitrified paving blocks, etc. A. B. Noll, of Martinsburg, is in charge. Nearly \$200,000 is the estimated final cost of buildings and equipment, and the immediate expenditure will be about \$75,000. It is planned to erect low-priced buildings at first and then for the company to manufacture its own materials for construction according to the original plans, steel and fireproofing throughout. Electric power will be used.

The Clay Products Co. of America, main office at Fairhope, Ala., has been organized to develop 300 acres of clay deposits and manufacture clay products at Clay City, Ala. Brick, tile, hollow block, terra cotta, fire-brick and roofing tile are now planned for the output. F. L. Brown is president and G. C. Streeter, is secretary.

## News From the Field.

The plant of the Impervious Brick Co. at New Straitsville, Ohio, will resume operations March 10.

The plant of the Upper Kittanning Brick Co. at Bradys Bend, Pa., which has been shut down all winter, will resume operations shortly. The president and general manager is H. Otto Wittkenn, of Jersey City, N. J. He has offered to give to any of his company's employees who work near the plant brick free of charge and to others not employed he will give brick for building at the actual cost of manufacturing same.

The Sharon Clay Products Co., Sharon, Pa., has the contract for 500,000 brick to be used in the spring on the Benzol plant which will be erected by the Carnegie Steel Co. at its works at Farrell, Pa.

The Van Ormer Brick Co. has had plans prepared for rebuilding the plant near Irwin, Pa., which was lately burned, which will be one of the best equipped brick plants in the state.

A strike in the sewer pipe plants at New Cumberland, W. Va., has been settled and more than 1,800 men have returned to work. The manufacturers have heavy orders on file and the fire brick manufacturers in that district also have enough business in sight to insure steady running until spring.

The Harbison-Walker Refractories Co. has declared the usual quarterly dividend of one-half of one per cent of the common stock of the company, payable March 1, to stockholders of February 20.

Louis and Albert Heihouse, of Warren, Pa., are arranging to build a big brick kiln at the Heihouse brick plant in Pleasant township, near that place.

Frank W. Stone and W. E. Stratton, of Empire, Ohio, have gone to Langley, S. C., where with others they expect to develop a large deposit of kaolin shortly.

With orders booked for about 3,500,000 bricks, the Bingen Brick Co. looks forward to the most successful year in the history of the company. The company has recently installed a lot of new machinery and has also made extensive improvements in their plant in Bingen, Pa. The plant will begin operations on full time and maximum capacity as the demand for bricks is increasing daily.

Hazelton and Wilkes-Barre men have recently subscribed the \$150,000 stock issue of the newly organized Hazelton and Wilkes-Barre Brick Co. The new company will soon be in a position to begin operations on an extensive scale.

The Equitable Brick Manufacturing Co., Philadelphia, Pa., has recently sold to Martin Molony ground on both sides of Rodman street, between Fifty-eighth and Fifty-ninth streets, each plot 500 by 65 feet, on which ground the purchaser will erect 66 brick dwellings. Mortgages aggregating \$121,600, secured on the ground and on these dwellings, have been recorded.

The Atlantic Brick Works, at Mays Landing, N. J., which has been closed during the winter months, will resume operations around the first of April, giving employment to more than 100 men.

Roy G. Smith, of the Bonnot Co., Kansas City, Mo., recently returned from a business trip to Omaha, Neb. Mr. Smith visited all the large brick manufacturing companies at Omaha and reports that they are all enjoying a nicely increased business there.

The Zoar Fire Clay Co., of New Philadelphia,

Ohio, is now well established in fine offices on West High street in that city.

The Freeman Fire Brick Co.'s plant at New Cumberland, W. Va., is included in the group of plants which will merge in a \$1,000,000 combine to be known as the Savage Clay Products Co. The merger is being put through by Alfred S. Freeman, of Steubenville, O.

The Freeport Brick Co. is opening a new vein of clay at its brick plant near Kittanning, Pa.

The United Brick Co. has started work on four new kilns at Conneaut, Ohio, each to have a capacity of 50,000 brick. These will replace the eight kilns which will be torn down as soon as the new ones are completed.

The Federal Clay Products Co., of which J. Ira Davey is general manager, will soon have completed a new factory at Mineral City, Ohio.

In the New Cumberland, W. Va., district there has been a big improvement in the paving brick and paving block industry the past few weeks. Three plants which have been inactive have resumed operations, the Claymont Block Works, the Etna and the Union brick plants. Manufacturers in that territory report that much municipal work will be done this year.

The American Sewer Pipe Co. has started work on rebuilding its big factory at Uhrichsville, Ohio, which was burned February 18.

The Municipal Shale Brick & Block Co., which was recently incorporated with a capital of \$250,000, at Martinsburg, W. Va., is arranging to build a plant with a daily capacity of 60,000 paving brick at a cost of \$150,000.

The Trumbull Brick Co., of Warren, Ohio, which was composed largely of Youngstown, Ohio, capitalists, has deeded its plant at Leavittsburg, Ohio, on the main line of the Erie Railroad to the Trumbull Clay Co., \$10,000.

William Myers, of Toronto, Ohio, has organized a new company which will build one of the largest sewer pipe factories in eastern Ohio at Port Homer, near Toronto. A large building will be erected at once with 12 kilns as a starter.

The Valley Brick Co. has been organized at

Pittsburgh, Pa., by the following men: John G. Hall, Joseph A. Beck and James Milholland.

The Savage Mountain Fire Brick Co., which has headquarters in the Second National Bank building, Pittsburgh, Pa., is getting some splendid business from South American companies and is highly optimistic over the prospects for trade in the Southern republics.

The Ringle Brick Co., of Wausau, Wis., of which John Ringle, for several years president of the Wisconsin Clay Manufacturers' Association, is at the head, has purchased 3,000 cords of hardwood for its brick kilns. The company has rebuilt its machine shed, installed a new engine and plans on turning out 3,000,000 brick this year. The plant will be started early in April.

Word comes from John B. Myers, president of the New Hope Vitrified Brick Co., New Hope, Pa., that operations at Huffnagle Station will be resumed at an early date.

Steps will be taken at once to rebuild the Columbia Fire Brick Co., at Strasburg, Ohio, which was destroyed by fire early in January with a loss of \$40,000, according to an announcement made recently.

The Neshannock Brick Co., which has been owned by V. O. Welker, of Volant, Pa.; W. S. Mears and J. W. Neff, of New Castle, Pa., and others, has been sold to Youngstown, Ohio, capitalists.

Thomas Turner and A. D. Smith, of Nanticoke, Pa., receivers of the Nanticoke Brick Co., have received permission from the court to run the plant for six months to show whether brick can be manufactured there at a profit.

The American Sewer Pipe Co. has started operations at its plant at Lisbon, Ohio, and reports a large volume of business in sight.

The Board of Public Works of Kansas City awarded to Williams and Samples the contract for 310 linear feet of 24-inch, 480 linear feet of 21-inch, and 660 linear feet of 15-inch vitrified clay sewer pipe, 520 linear feet of 12-inch clay pipe, and 450 linear feet of 15-inch C. B. construction. This sewer contract calls for 10 catch basins and six manholes.

Rantly, O. L. S., Huntingdon, P. Q. He was followed by Thomas Adams on "Town Planning"; Col. W. H. Sawyer, of Boston, on "Traffic," and E. A. James on "Brick Roads and Streets." The business session of the Ontario Good Roads Association was held the same day and S. L. Squire, of Waterford, was elected president, with N. Vermilyea and J. A. Sanderson as honorary presidents.

The first paper to be read Friday morning was by J. Pearson, of Toronto, on "Bituminous Construction." He was followed by Mr. Van Scyoc, chief engineer of the Toronto Hamilton Highway Commission, who contributed a paper on "Concrete Roads and Streets." The creosoted wood block was discussed by City Engineer McCallum, of Hamilton.

At the business session of the Dominion Good Roads Association, held on Friday afternoon, B. Michaud was elected president for the ensuing year, succeeding Mr. McLean. W. A. McLean and U. H. Dandurand were elected honorary presidents and G. A. McNamee, of Montreal, was chosen to fill the position of secretary-treasurer.

Road material and machinery of all classes were exhibited in connection with the Good Roads Congress.

### Road Congress to Meet at Oakland.

At a meeting of the executive committee of the Pan American Road Congress, held in New York City, on April 16, it was definitely decided to hold the Congress at Oakland, Cal., during the week of Sept. 13. This date was fixed upon, owing to the advantageous arrangements that could be made for halls for meeting places, and also because it was felt that this date would enable engineers who would attend the International Engineering Congress to attend the Pan American Road Congress as well.

The members of the committee reported good progress and good prospects for a great gathering of road builders. The program will include speakers of national and international reputation as experts in the construction, repair and maintenance of highways.

Suggestions have been made—and it is believed will be carried out—that there be set aside by the Exposition authorities one day, during the week of the Congress, to be known as Pan American Road Congress Day.

It is expected that this Congress will bring together those interested in highway improvement—not only from all parts of the United States and Canada, but also from the South American countries—all of which will be invited officially to participate in the deliberations of the Congress.

The Pan American Road Congress will be held under the joint auspices of the American Road Builders' Association and the American Highway Association. The plans will be made and carried out by an Executive Committee of five, of which Governor Charles W. Gates, of Vermont, is chairman, the other four members of the committee being as follows: James H. MacDonald, former state highway commissioner of Connecticut; Major W. W. Crosby, former state highway engineer of Maryland; J. E. Pennybacker, chief, Division of Economics, U. S. Office of Public Roads, and E. L. Powers, editor of "Good Roads."

### SWING-HAMMER PULVERIZER CATALOGUE.

The Jeffrey Manufacturing Co., of Columbus, Ohio, has recently issued a new 48-page bulletin, No. 147, illustrating and describing the prominent features of its complete line of swing hammer pulverizers, giving full information regarding capacities, speeds, horsepower, general dimensions, etc. More than 1,000 of these machines are now in daily operation reducing limestone, shale, gypsum, clay, coal, coke, ores, tankage, bark, oyster shells, rock for road top dressing, and many other materials. A free copy of this bulletin may be obtained by writing to the Columbus office.

## Canadian Good Roads Experts Meet

Convocation Hall, of the Toronto University, witnessed the united convention of the Dominion and the Ontario Good Roads associations, when highway officials and engineers met there during the week of March 22-26. It was the thirteenth annual gathering of the Ontario and the second of the Dominion association and was marked by the attendance of road experts from various parts of Canada, New York, New Jersey, Massachusetts and Kansas.

The opening session on March 22 was devoted to the renewing of acquaintances.

W. A. McLean, chief engineer of the Ontario Highway Commission, and president of the Dominion Good Roads Association, was ill at his home and the chair was occupied by the honorary president, U. H. Dandurand, of Montreal.

George C. Diehl, engineer of Erie county, N. Y., read a paper Tuesday morning, March 23, on "Road Construction in New York State." The second paper was read by George W. Tillson, president of the American Road Builders' Association, Brooklyn, N. Y., on "Wearing Surfaces." This was succeeded by a paper on "Finance," by S. L. Squire, of Waterford, Ont., in which he advocated the short term bond issue.

The first address of the afternoon session was by Dr. R. A. Falconer, president of the Toronto University, who saw in the good roads movement a potent factor for bringing out the rational ratio between city and country life. Other speakers at the afternoon session were B. Michaud, deputy min-

ister of roads for the province of Quebec, on "Road Laws," and L. E. Allen, civil engineer of Belleville, on "Bridges and Culverts."

At Wednesday morning's session, R. A. Meeker, state highway engineer of Trenton, N. J., read a paper on "State Roads of New Jersey." He was followed by a paper on "Foundations," by J. Duchastel, city engineer of Outremont, P. Q. A paper on "Machinery" was also read by Fred E. Ellis, manager of the Essex Trap Rock & Construction Co., Peabody, Mass. Following this session, George W. Tillson, president of the American Road Builders' Association, was entertained at luncheon.

Major W. W. Crosby, consulting engineer of Baltimore, opened the afternoon session with a paper on "Dust Prevention." He was followed by L. Henry, chief provincial engineer for Quebec, on "Maintenance," and George H. Henry, M. P. P., on "Road Organization." The Canadian Clay Products Bureau entertained about 40 roadway engineers at dinner, which was followed by an illustrated lecture on "The Manufacture and Advantages of Clay Sewer Pipe," by Benjamin Brooks, engineer of the International Clay Products Bureau, Kansas City, Mo.

C. R. Wheelock opened Thursday morning's session with a talk on "Road Location." He was followed by Charles Talbot, who read a paper on "Gravel and Stone Roads," and by George Powell, who spoke on "Asphalt Pavements in Toronto."

"Good Roads and the Contractor" was discussed at the opening of the afternoon session by H. T.

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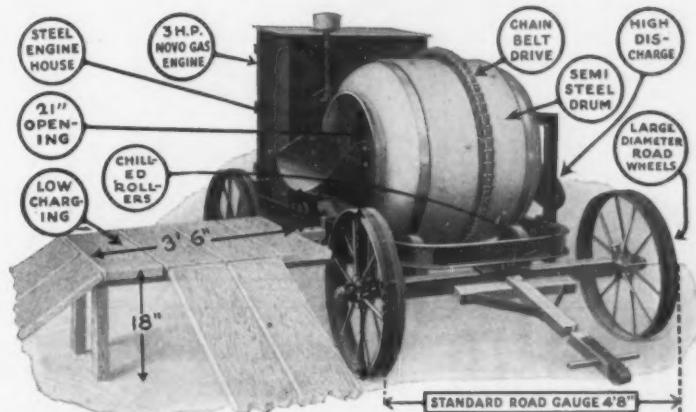
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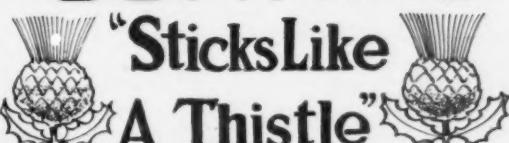
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## ROCK PRODUCTS and BUILDING MATERIALS

### *Index to Advertisements*

APRIL 22, 1915

|  |    |
|--|----|
| A. & C. Stone & Lime Co. ....                  | 43 |
| Allis-Chalmers Mfg. Co. ....                   | 7  |
| Amburson Co. ....                              | 57 |
| American Cement Plaster Co. ....               |    |
| American Clay Machine Co. ....                 | 60 |
| American Clay Co. ....                         |    |
| American Keene Cement Co. ....                 | 1  |
| American Process Co. ....                      | 18 |
| American Pulverizer Co. ....                   | 10 |
| American Steel & Wire Co. ....                 | 11 |
| Atlas Car & Mfg. Co. ....                      | 60 |
| Atlas Portland Cement Co. ....                 | 60 |
| Austin Mfg. Co. ....                           | 9  |
| Bacon, C. Earle. ....                          | 2  |
| Bartlett, The C. O., & Snow Co. ....           | 31 |
| Beiden Brick Co. ....                          |    |
| Best Bros. Keene's Cement Co. ....             |    |
| Bonnot Co., The. ....                          | 9  |
| Books for the Trade. ....                      | 54 |
| Bostwick Steel Lath Co. ....                   | 57 |
| Bourse, The. ....                              | 39 |
| Bradley Plyv. Co. ....                         | 5  |
| Buckbee, J. C. Co. ....                        |    |
| Butterworth & Lowe. ....                       | 9  |
| Cabot, Samuel, Inc. ....                       | 39 |
| Caldwell, H. W., & Son Co. ....                | 52 |
| Canada Pebble Co., Ltd. ....                   | 60 |
| Canfield Oil Co. ....                          |    |
| Cardiff Gypsum Plaster Co. ....                |    |
| Carolina Portland Cement Co. ....              | 1  |
| Cement Tile Machinery Co. ....                 |    |
| Cresfit Waterproothing Co. ....                | 54 |
| Chain Belt Co. ....                            | 51 |
| Chalmers & Williams. ....                      | 7  |
| Chattanooga Paint Co. ....                     | 4  |
| Chicago Portland Cement Co. ....               |    |
| Clayton Air Compressor Wks. ....               |    |
| Classified Business Directory. ....            | 56 |
| Cleveland Builders' Supply Co. ....            |    |
| Clinchfield Portland Cement Corp. ....         | 4  |
| Clinton Metallic Paint Co. ....                | 15 |
| Columbus Chain Co., The. ....                  | 52 |
| Coplay Cement Mfg. Co. ....                    | 18 |
| Crane, F. D., Co. ....                         |    |
| Davenport Loco. Works. ....                    | 54 |
| Duff Patents Co. ....                          | 16 |
| Duff & Co., Raymond W. ....                    | 14 |
| Dunning, W. D. ....                            | 29 |
| Ehrsam, J. B., & Sons Mfg. Co. ....            | 6  |
| Faeberhill Mfg. Co. ....                       |    |
| Farrell Fdy. & Mch. Co. ....                   | 2  |
| Foster Co., L. B. ....                         | 39 |
| Fuller Eng. Co. ....                           | 18 |
| Goodrich, B. F. Co. ....                       |    |
| Gordon-Hitti Co. ....                          | 51 |
| Grimsley, G. P. ....                           | 39 |
| Haisa, Geo., Mfg. Co. ....                     | 15 |
| Hannibal Lime Co. ....                         |    |
| Harris Brick Co. ....                          |    |
| Hendricks Mfg. Co. ....                        | 18 |
| Hercules Waterproof Cement Co. ....            | 7  |
| Houston Bros. Co. ....                         |    |
| Hunt, Robert W., & Co. ....                    | 18 |
| Huron, Wyandotte Portland Cement Co. ....      | 2  |
| Imperial Belting Co. ....                      | 32 |
| Improved Equipment Co. ....                    | 18 |
| Indianapolis Cable Excavator Co. ....          | 15 |
| International Steam Pump Co. ....              |    |
| Jaeger Machine Co. ....                        | 29 |
| Jalte Co., The. ....                           | 39 |
| Jeffrey Mfg. Co. ....                          | 4  |
| Johnston & Chapman Co. ....                    | 5  |
| K-B. Pulverizer Co., Inc. ....                 | 8  |
| Kansas City Pt. Ct. Works. ....                | 29 |
| Kelley Island Lime & Trans. Co. ....           | 13 |
| Kent Mill Co. ....                             | 10 |
| Kilbourne & Jacobs Mfg. Co. ....               | 7  |
| Kissel Motor Car Co. ....                      |    |
| Kritzer Company, The. ....                     | 16 |
| Lehigh Portland Cement Co. ....                | 58 |
| Leschen, A., & Sons Rope Co. ....              | 29 |
| Lewistown Fdy. & Mch. Co. ....                 | 54 |
| Link Belt Co. ....                             | 17 |
| Loomis Machine Co. ....                        | 52 |
| McLanahan Stone Mch. Co. ....                  | 7  |
| McMyler Interstate Co. ....                    | 53 |
| MacNeal, Jas. B., & Co. ....                   | 39 |
| Manierre Engineering & Mch. Co. ....           |    |
| Marion-Osgood Co., The. ....                   | 53 |
| Marquette Cement Mfg. Co. ....                 | 55 |
| Manuee Chemical Co. ....                       | 21 |
| Meade, Richard K. ....                         | 18 |
| Metropolitan Paving Brick Co. ....             |    |
| Miscampbell, H. ....                           | 12 |
| Mitchell Lime Co. ....                         | 13 |
| National Lime & Stone Co. ....                 | 13 |
| National Mortar & Sup. Co. ....                |    |
| National Retarder Co. ....                     | 17 |
| Northwestern Expanded Metal Co. ....           |    |
| North Western States Portland Cement Co. ....  | 32 |
| Ohio & Western Lime Co. ....                   | 12 |
| Owen & Son, J. D. ....                         |    |
| Pennsylvania Crusher Co. ....                  | 2  |
| Phoenix Portland Cement Co. ....               | 1  |
| Pierce Arrow Motor Car Co. ....                |    |
| Plymouth Clay Products Co. ....                |    |
| Plymouth Gypsum Co., The. ....                 | 57 |
| Power & Mining Mach. Co. ....                  | 11 |
| Raymond Bros. Impact. Pulv. Co., The. ....     | 4  |
| Revere Rubber Co. ....                         |    |
| Reynolds Asphalt Shingle Co. ....              |    |
| Ricketson Mineral P. Wks. ....                 | 4  |
| Ruggles-Coles Eng. Co. ....                    | 2  |
| Sandusky Portland Cem. Co. ....                | 18 |
| Sanborn Bros. ....                             | 57 |
| Seeger, W. H. ....                             |    |
| Shaffer Engineering & Equipment Co., The. .... | 53 |
| Scotto Lime & Stone Co. ....                   |    |
| Smith, F. L. & Co. ....                        | 18 |
| Shaw, Willis, Mch. Co. ....                    | 39 |
| Stephens-Adamson Mfg. Co. ....                 | 31 |
| St. Louis Port. Cement Co. ....                | 26 |
| Sturtevant Mill Co. ....                       | 8  |
| Sykes Metal Lath & Roofing Co. ....            | 58 |
| Tew-Automatic Shovel Co., The. ....            | 30 |
| Thornton Fire Brick Co. ....                   |    |
| Toepfer, W., & Sons. ....                      | 53 |
| Taylor Eng. & Mfg. Co. ....                    | 11 |
| Troy Wagon Works Co., The. ....                | 3  |
| Trussed Concrete Steel Co. ....                | 30 |
| Union Mining Co. ....                          |    |
| Union Sand & Material Co. ....                 | 1  |
| U. S. Gypsum Co. ....                          | 26 |
| Urschel Bates Valve Bag Co. ....               | 31 |
| Vigo-American Clay Co. ....                    |    |
| Vulcanite Portland Cement Co. ....             | 2  |
| Webb City & Carterville Fdy. & Mch. Co. ....   | 11 |
| Webster Mfg. Co. ....                          |    |
| Weller Mfg. Co. ....                           | 15 |
| Wheeling Wall Plaster Co. ....                 |    |
| Whitehall Cement Mfg. Co. ....                 | 52 |
| Williams, C. K. Co. ....                       | 38 |
| Williams Patent Crusher & Pulverizer Co. ....  | 5  |
| Wolverine Portland Cement Co. ....             | 52 |
| Woodville Lime & Cement Co. ....               |    |

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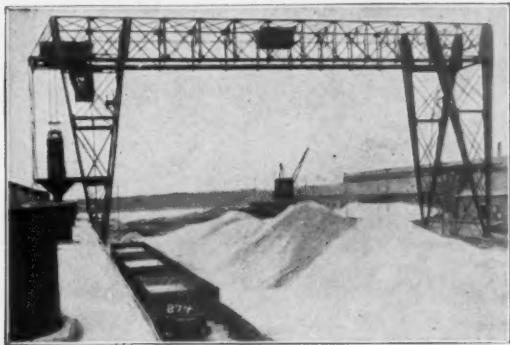
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**THE MARION-OSGOOD COMPANY**

Eastern Office: 51 STATE STREET, ALBANY, N. Y. EXPORT OFFICE: Cincinnati Agency, H. S. Johannsen, Atlanta Agency, Thaw & Williams, 202 Bell Block 50 Church St., N. Y. W. E. Austin Mch. Co., 2 Spring.



Sand Handling Gantry Crane equipped with a man trolley, 4-line, two yard Clam Shell Bucket, and rigidly attached hopper to guide the material into the storage reservoirs.

**You Can Reduce Your Handling Costs**

by the use of proper equipment for your work, which should easily and economically handle the material it was designed to take care of. That is why the Edward Ford Plate Glass Company, of Toledo, O., chose a

**"McMyler Interstate Gantry Crane"**

to take care of unloading sand from cars to stock pile, and then to the mill, as same is needed.

**The McMyler Interstate Co. Dept. P-3 Cleveland, Ohio**

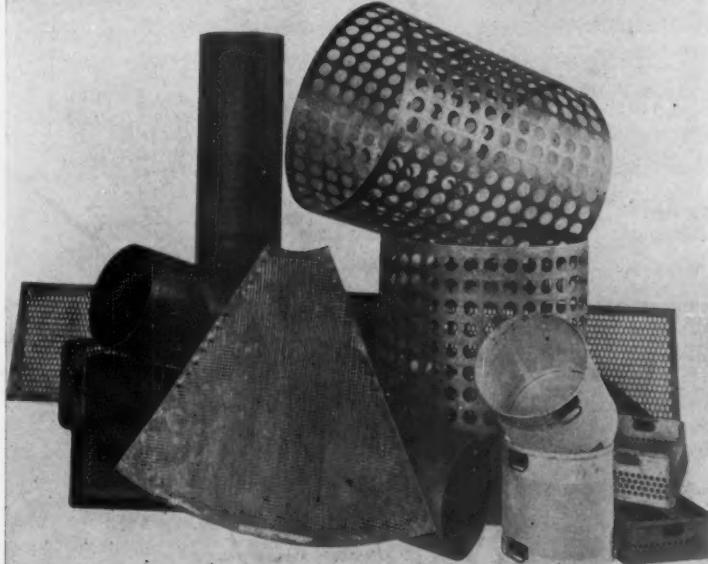
New York

London

Chicago

PRODUCTS—Locomotive Cranes, All Type Buckets for every purpose—Elevating and Conveying Machinery, etc.

**PERFORATED METAL**  
 STEEL SCREENS :: :: IRON AND STEEL WORK

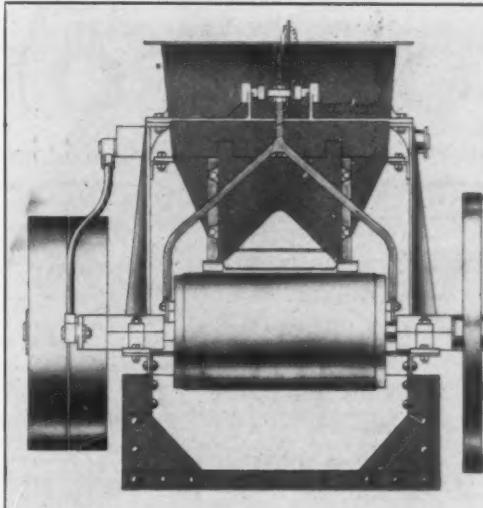


ELEVATOR BUCKETS, STEEL TANKS, ETC.

**W. TOEPFER & SONS**  
 ESTABLISHED 1855

183 Broadway

Milwaukee, Wis.

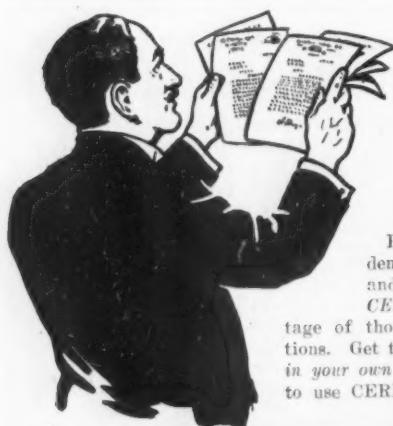


To weigh and regulate the flow of material traveling in a continuous stream over a conveyor.

**The Schaffer Poidometers**  
 ARE ESPECIALLY ADAPTED FOR

Uniting different materials in correct proportions.  
 Delivering a predetermined quantity of materials to pulverizing or grinding machinery.  
 Feeding crushed coal to boilers.  
 Loading materials into cars or vessels and giving a record of the quantity loaded.

**The Schaffer Eng. and Equip. Co.**  
 TIFFIN, OHIO



## Get the Orders!

Be prepared for the big, steady demand for CERESIT this Spring and Summer! Stock up with all CERESIT Products! Take advantage of thousands of architects' specifications. Get the business of contractors right in your own territory who have instructions to use CERESIT.

# CERESIT

TRADE MARK  
REGISTERED

CERESIT Waterproofing Compound is the universal waterproofing because it is adapted to all forms of waterproofing. Jobbers don't have to carry a hundred-and-one different grades. CERESIT covers every specific requirement.

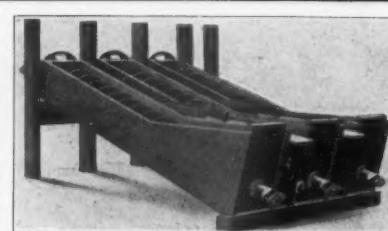
Send for the latest issue of "The Ceresit Waterproofer." Intensely interesting.

Write today for attractive dealer proposition.

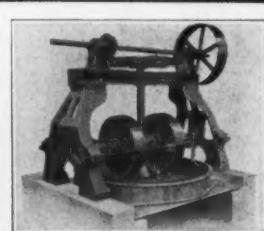
Ceresit Waterproofing Co.  
924 Westminster Bldg. CHICAGO

### Seven CERESIT Sellers:

Waterproofing Compound  
Floor Hardener  
Damp-proof Plaster Bond  
Damp-proof Coating  
Stone Backing  
Weather-Wear Roof Coat  
Ceresitol



Sand Washers

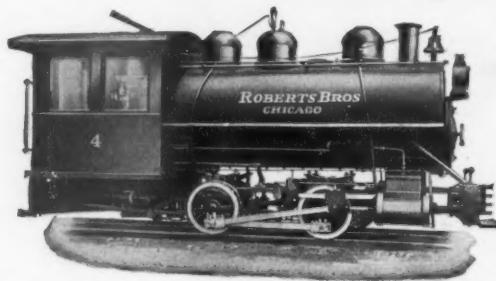


9-Foot Dry Pan

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Builders of heavy duty crushers and glass sand machinery  
Glass sand plants equipped complete

WRITE FOR PRICES AND CATALOG



Builders of all types of locomotives for industrial services.

### Davenport Locomotive Works DAVENPORT, IOWA

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Halbert P. Gillette. Price \$5.00. C  
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H. P. Gillette and C. S. Hill. Price \$5.00. C  
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Cement and Concrete  
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Construction  
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W. A. Radford. Price \$1.00.

ROCK PRODUCTS AND BUILDING MATERIALS

537 S. DEARBORN STREET

CHICAGO

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

From Printers Ink, March 11, 1915

# Getting the Business by Going After It

"The high interest rates which prevail greatly restricted the construction of new buildings throughout the country; the number of permits issued was considerably smaller than in the preceding year." We are quoting from the annual report of Clarence M. Woolley, president of the American Radiator Company, for the fiscal year ending January 31, 1915. A bad year for boilers and radiators with a contracting market, yet the net profits of the company were \$2,289,075 as against \$2,081,267 for the preceding year, a period in which more building permits were issued.

How was it done? President Woolley tells us in the very next sentence: "Greater effort was made, therefore, through promotional and advertising efforts, in conjunction with the more intensive personal canvass by the sales organization, to effect employment of modern heating systems, in a larger percentage of new buildings." Instead of regarding advertising as an "expense" which offers the most convenient opportunity to make a "saving," the company appreciates it at its true value and makes it work the harder when conditions are less favorable. The balance sheet tells the story.

Little comment is necessary to enforce so plain a moral. PRINTERS' INK has always maintained that the time to advertise the hardest is when advertising is most needed. The American Radiator Company is one concern which comprehends the truth in the old maxim: "He gets the business who goes after it."



Marshall Field & Co.  
(Store for Men)  
Chicago

Engineers, architects and contractors who have established a reputation as leaders in their field, have specified and used Marquette Portland Cement in most of their important work; they knew they could depend on Marquette quality.

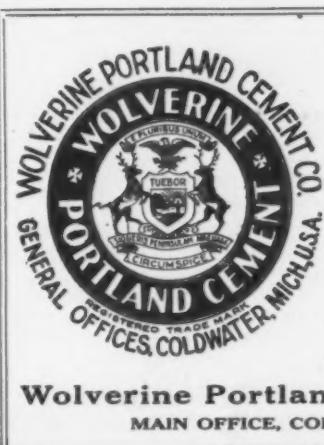
You can also depend on that same quality to help build your reputation and business when you handle Marquette.

**Marquette Cement Mfg. Co.**  
1335 Marquette Bldg. Chicago

## Northwestern Portland Cement



The Reliable Portland Cement  
A Portland Cement for the  
**NORTHWEST**  
NORTHWESTERN STATES PORTLAND CEMENT COMPANY  
MASON CITY, IOWA



**"WOLVERINE"**  
THE ALRIGHT CEMENT

Made Right Sold Right  
Works Right Wears Right  
The Best is None Too Good For You.  
Insist Upon

**"WOLVERINE"**  
Write for Booklet and Quotations.  
Factories at Coldwater and Quincy, Mich.  
Capacity 3500 Daily.

W. E. COBEAN, Sales Agent, Coldwater, Mich.

**Wolverine Portland Cement Company**  
MAIN OFFICE, COLDWATER, MICHIGAN

# CLASSIFIED BUSINESS DIRECTORY

## BAGS AND BAG TYERS.

Faerberhill Mfg. Co. (bag tyers).  
Jaite Company, The.  
Urschel Bates Valve Bag Co.

## BELTING.

H. W. Caldwell & Co.  
Chain Belt Co.  
Dull & Co., R. W.  
Imperial Belting Co.  
Link Belt Co.  
Revere Rubber Co.  
Stephens-Adamson Mfg. Co.  
Webster Mfg. Company.  
Weller Mfg. Co.

## BRICK.

Belden Brick Co.  
Metropolitan Paving Brick Co.

## BRICK CLAMPS.

The P. D. Crane Co.

## BRICK PAVING.

Harris Brick Co.  
Metropolitan Paving Brick Co.  
Thornton Fire Brick Co.

## BUCKETS, DUMPING AND GRAB.

Atlas Car & Mfg. Co.  
H. W. Caldwell & Co.  
Haiss Mfg. Co., Inc., Geo.  
Hendrich Mfg. Co.  
Link Belt Co.  
McMyler-Interstate Co.  
Willis Shaw Mch. Co.

## CABLES.

American Steel & Wire Co.  
Dull & Co., R. W.  
Sauerman Bros.

## CARS, INDUSTRIAL.

Atlas Car & Mfg. Co.  
Austin Mfg. Co.  
Haiss Mfg. Co., Inc., Geo.  
Kilbourne & Jacobs Mfg. Co.  
Link Belt Co.  
Stephens-Adamson Mfg. Co.  
Weller Mfg. Co.

## CASTINGS.

Allis-Chalmers Mfg. Co.  
Taylor Eng. & Mfg. Co.

## CEMENT, CAEN STONE.

Cleveland Bldrs. Supply Co.

## CEMENT, HYDRAULIC.

Carolina Portland Cement Co.

## CEMENT, PORTLAND.

Atlas Portland Cement Co.  
Carolina Portland Cement Co.  
Chicago Portland Cement Co.  
Clinchfield Portland Cement Corp.  
Coplay Cement Mfg. Co.  
Huron-Wyandotte Port. Cement Co.  
Kansas City Portland Cement Co.  
Lehigh Portland Cement Co.  
Marquette Cement Mfg. Co.  
Northwestern States Portland Cement Co.  
Ohio & Western Lime Co.  
Phoenix Portland Cement Co.  
Sandusky Portland Cement Co.  
St. Louis Portland Cement Works.  
Union Sand & Material Co.  
Vulcanite Portland Cement Co.  
Whitehall Portland Cement Mfg. Co.  
Wolverine Portland Cement Co.  
Woodville Lime & Cement Co., The.

## CHAINS.

Chain Belt Co.  
Columbus Chain Co., The.  
Jeffrey Mfg. Co.  
Link Belt Co.

## CLAYWORKING MCHY.

American Clay Mch. Co.  
Bartlett, C. O., & Snow Co.

## COLORINGS DRY AND MORTAR.

Samuel Cabot.  
Chattanooga Paint Co.  
Clinton Metallic Paint Co.  
Macneal, James B., & Co.  
Ricketson Mineral Paint Works.  
Williams, C. K., & Co.  
Woodville Lime & Cement Co.

## COMPRESSORS.

Allis-Chalmers Mfg. Co.  
Clayton Air Compressor Co.

## CONCRETE MIXERS.

Chain Belt Co.  
Cement Tile Mach. Co.  
Jaeger Mach. Co.  
Miscampbell, H.  
Power & Mining Mach. Co.

## CONCRETE REINFORCEMENT.

American Steel & Wire Co.

## CONSULTING GEOLOGISTS.

Grimsley, G. P., Ph. D.  
Hunt, Robt. W., & Co.

## CORNER BEADS.

Bostwick Steel Lath Co., The.  
North Western Expanded Metal Co.  
Sykes Metal Lath & Roofing Co.

## CRANES—LOCOMOTIVE AND GANTRY.

Link Belt Co.  
McMyler-Interstate Co.

## CONVEYORS AND ELEVATORS.

Allis-Chalmers Manufacturing Co.  
Austin Mfg. Co.  
Bartlett, C. O., & Snow Co.  
Caldwell, H. W., & Sons Co.  
Chain Belt Co.  
Dull, Raymond W., & Co.  
Ehrsam, J. B., & Sons Mfg. Co.  
Haiss Mfg. Co., Inc., Geo.  
Jeffrey Manufacturing Co.  
Link Belt Co.  
McMyler-Interstate Co.  
McLanahan Stone Machine Co.  
Manierre Eng. & Mach. Co.  
Power & Mining Mach. Co.  
Stephens-Adamson Mfg. Co.  
Toepfer, W., & Sons.  
Webster Mfg. Company.  
Weller Mfg. Co.

## CRUSHED STONE.

A. & C. Stone & Lime Co.

## CRUSHERS AND PULVERIZERS.

Allis-Chalmers Manufacturing Co.  
American Pulverizer Co.  
Austin Mfg. Co.  
Bacon, Earl C.  
Bartlett, C. O., & Snow Co.  
Bonnot Co., The.  
Bradley Pulverizer Co.  
Butterworth & Lowe.  
Chalmers & Williams.  
Ehrsam, J. B., & Sons Mfg. Co.  
Jeffrey Manufacturing Co.  
K. B. Pulverizer Co.  
Kent Mill Co.  
Lewistown Foundry & Machine Co.  
McLanahan Stone Machine Co.  
Pennsylvania Crusher Co.  
Power & Mining Mach. Co.  
Raymond Impact Pulverizer Co.  
Sturtevant Mill Co.  
Traylor Eng. & Mfg. Co.  
Webb City & Carterville F. & M. Wks.  
Williams Pat. Crusher & Pulverizer Co.

## DRAIN TILE.

American Clay Co.  
Vigo-American Clay Co.

## DRILLS.

Loomis Machine Co.  
American Process Co.  
Bartlett, C. O., & Snow Co.  
Link Belt Co.  
Ruggles-Coles Eng. Co.

## ENGINEERS.

American Process Co.  
Bacon, Earl C.  
Buckbee Co., J. C.  
Duff Patents Co., Inc.  
Dull, Raymond W., & Co.  
Fuller Engineering Co.  
Grimsley, G. P.  
Hunt, Robt. W., & Co.  
Improved Equipment Co.  
Meade, R. K.  
Sauerman Bros.  
Schaffer Eng. & Equip. Co.  
Smith & Co., F. L.  
Stephens-Adamson Mfg. Co.  
Traylor Eng. & Mfg. Co.

## ENGINES.

Allis-Chalmers Mfg. Co.  
Power & Mining Mach. Co.

## EXCAVATORS.

Buckbee Co., J. C.  
Raymond W. Dull Co.  
Haiss Mfg. Co., Inc., Geo.  
Indianapolis Cable Excavator Co.  
McMyler-Interstate Co.  
Sauerman Bros.  
Weller Mfg. Co.

## FIRE BRICK.

Carolina Portland Cement Co.  
Improved Equipment Co.  
Thornton Fire Brick Co.  
Union Mining Co.

## FLOOR HARDENER.

Ceresit Waterproofing Co.

## FURNACES FOR SPECIAL PURPOSES.

Improved Equipment Co.

## GAS PRODUCERS.

Duff Patents Co.

Improved Equipment Co.

## GATES.

Haiss Mfg. Co., Inc., Geo.

## GEARS.

Caldwell, H. W., & Son Co.  
Chain Belt Co.  
Link Belt Co.  
Stephens-Adamson Mfg. Co.  
Weller Mfg. Co.

## GEAR.

## GLASS SAND MACHINERY.

Lewiston Edy. & Mach. Co.

## GYPSUM BLOCK.

American Cement Plaster Co.  
U. S. Gypsum Co.  
Plymouth Gypsum Co.

## GYPSUM—PLASTER.

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American Keene Cement Co.  
Best Bros. Keene's Cement Co.  
Cardiff Gypsum Co.  
Carolina Portland Cement Co.  
National Mortar & Supply Co.  
Ohio & Western Lime Co.  
Plymouth Gypsum Co.  
U. S. Gypsum Co.  
Wheeling Wall Plaster Co.

## HAIR.

Ohio & Western Lime Co.

## HOISTS, ELECTRIC AND STEAM.

Allis-Chalmers Mfg. Co.  
Buckbee Co., J. C.  
Link Belt Co.  
Haiss Mfg. Co., Inc., Geo.

## HOLLOW CLAY TILE.

American Clay Co.  
Metropolitan Paving Brick Co.  
Vigo-American Clay Co.

## HYDRATING MCHY.

Atlas Car & Mfg. Co.  
Kritzer Co., The.  
Miscampbell, H.

## LIME.

Carolina P. C. Co.  
Hannibal Lime Co.  
Kelleys Island Lime & Trans. Co.  
Mitchell Lime Co.  
National Lime & Stone Co.  
National Mortar & Supply Co.  
Ohio & Western Lime Co., The.  
Owens & Son, John D.  
Scotto Lime & Stone Co.  
Woodville Lime & Cement Co.

## LIME, HYDRATED.

Hannibal Lime Co.  
Kelleys Island Lime & Transport Co.  
Mitchell Lime Co.  
National Lime & Stone Co.  
National Mortar & Supply Co.  
Ohio & Western Lime Co., The.  
Owens & Son, John D.  
Scotto Lime & Stone Co.  
Woodville Lime & Cement Co., The.

## LIME KILNS.

Atlas Car & Mfg. Co.  
Improved Equipment Co.

## LOADERS AND UNLOADERS.

Amburson Company.  
Chain Belt Co.  
Haiss Mfg. Co., Inc., Geo.  
Jeffrey Mfg. Co.  
Link Belt Co.  
Manierre Eng. & Mach. Co.  
Stephens-Adamson Mfg. Co.  
Weller Mfg. Co.

## LOCOMOTIVES.

Davenport Locomotive Wks.  
Willis Shaw Mch. Co.

## MANGANESE STEEL.

Allis-Chalmers Mfg. Co.  
Link Belt Co.  
Taylor-Wharton Iron & Steel Co.

## METAL LATH.

Bostwick Steel Lath Co.  
Carolina Portland Cement Co.  
North Western Expanded Metal Co.  
Sykes Metal Lath & Roofing Co.  
Trussed Concrete Steel Co.

## MOTOR TRUCKS.

Kissel Motor Car Co.  
Pierce-Arrow Motor Car Co.

## PAINT AND COATINGS.

Cabot, Samuel.

Canfield Oil Co.

Ceresit Waterproofing Co.

Chattanooga Paint Co.

Gordon-Hitt Co.

Macneal, James B., & Co.

Ricketson Mineral Paint Co.

Williams, C. K., & Co.

## PEBBLES.

Canada Pebble Co.

## PERFORATED METALS.

Allis-Chalmers Mfg. Co.

Johnson & Chapman.

Hendrick Mfg. Co.

Toepfer, W., & Son.

## PLASTER.

See Gypsum.

## PLASTER BOARD.

American Cement Plaster Co.

Plymouth Gypsum Co.

U. S. Gypsum Co.

## PLASTER BOND.

Ceresit Waterproofing Co.

## PLASTER MCHY.

Butterworth & Lowe.  
Dunning, W. D.  
Ehrsam, J. B., & Sons Mfg. Co.  
Miscampbell, H.  
Williams Pat. Crusher & Pulverizer Co.

## PREPARED ROOFING—SHINGLES.

Carolina Portland Cement Co.  
Reynolds Asphalt Shingle Co.

## PUMPS.

Allis-Chalmers Mfg. Co.  
International Steam Pump Co.

## QUARRY CARS.

See Cars.

## ROAD MACHINERY.

Austin Mfg. Co.  
Troy Wagon Works.

## ROOFING-METAL.

Sykes Metal Lath & Roofing Co.

## SAND.

Union Sand & Material Co.

## SAND AND GRAVEL WASHING PLANTS.

Dull & Co., Raymond W.  
Link Belt Co.

## SAND LIME BRICK MACHINERY.

Amer. Clay Machy. Co.  
Jackson & Church.

## SCREENS.

Allis-Chalmers Mfg. Co.  
American Pulverizer Co.

## SEWER PIPE.

Bourse.  
Dolese & Shepard Co.

Shaw Mach. Co., Willis.

## SEWER PIPE.

Houston Bros. Co.  
Plymouth Clay Products Co.

## SHEAVES, BLOCKS AND VALVES.

Haiss Mfg. Co., Inc., Geo.

## SINK AND FLOAT TESTERS.

Pennsylvania Crusher Co.

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Troy Wagon Wks. Co., The.

## STEAM SHOVELS.

Marion-Osgood Co.  
Theaw Automatic Shovel Co.

Shaw Machy. Co., Willis.

## STUCCO RETARDER.

National Retarder Co.

## TRAILERS, TRACTORS AND MOTOR TRUCKS.

Troy Wagon Wks. Co., The.

## TRAMWAYS.

Amburson Company.  
American Steel & Wire Co.

Link Belt Co.

## TRUCK AND WHEELBARROWS.

Bostwick Steel Lath Co.

Linkbourne & Jacobs Mfg. Co.

## TUBE MILLS.

Allis-Chalmers Manufacturing Co.

Power & Mining Mach. Co.

Smith & Co., F. L.

## WAGONS—DUMP AND REVERSIBLE.

Troy Wagon Wks. Co., The.

## WALL PLUGS AND TIES.

Bostwick Steel Lath Co.

Sykes Metal Lath & Roofing Co.

## WATERPROOFING.

Cabot, Samuel, Inc.

Canfield Oil Co.

Carolina Portland Cement Co.

Ceresit Waterproofing Co.

Hercules Waterproofing Cement Co.

Maumee Chemical Co.

Sandusky Portland Cement Co.

## WEIGHING MACHINES.

Automatic Weighing Machine Co.

Schaffer Eng. & Equip. Co.

Sturtevant Mill Co.

## WIRE AND WIRE FENCING.

American Steel & Wire Co.

# BOSTWICK

## YOU CAN SELL

### "Bostwick Truss-Loop" Metal Lath

Sales Pointers  
No. 4

Look at the Last Three  
Issues Rock Products  
for Nos. 1, 2 and 3

**BECAUSE**, National, State and Municipal regulations for buildings are rapidly making construction with some measure of fireproofing a necessity.

**BECAUSE**, the hundreds and thousands of dollars spent in 1914 to focus the attention of the nation upon the immense annual fire loss (last year \$235,000,000) has had such results that the prospective builder is in a receptive state of mind and will at this time as never before give his attention to the question of fire protection.

**The Bostwick Steel Lath Co.**

**Niles, Ohio**



CROWING FOR  
PLYMOUTH PLASTER  
WOOD FIBER PLASTER  
PLYMOUTH FIREPROOF  
PARTITION BLOCKS  
SACKETT PLASTIC BOARD  
STEEL STUDDING

THE QUALITY BRANDS

WRITE US FOR PRICES AND  
ADVERTISING MATTER

**Plymouth Gypsum Co.**  
Fort Dodge, Iowa

### Dragline Cableway Excavators

SHEARER & MAYER & SAUERMAN PATENTS

Dig convey, elevate and dump in one continuous operation, from wet or dry pit, to bins, screens, cars, or storage piles. Operated with a double drum friction hoist. Buckets are designed to dump at either end of track cable and are under positive control of one operator.

Write us your conditions and requirements and we will advise you if our equipment is adaptable.



**Sauerman Brothers, Engineers**  
1140 Monadnock Block  
CHICAGO, ILLINOIS

## The Amburseen Company as Tramway Engineers



WE are often asked why the AMBURSEN COMPANY took up Short-Haul Transportation as a Department. The answer is timely because it strengthens our position as Consulting Engineers for the purchaser.

The AMBURSEN COMPANY is known everywhere as Engineers and Contractors in heavy concrete work in hydraulic construction. During the depression of the past two years we have made a systematic study of all methods leading to reduction of cost per yard. A heavy item is the haul of material, gravel, sand, broken stone, cement, steel, etc., etc., from the railroad point, the quarry or gravel pit to the work. The great sums of money expended by us in this item led to an investigation to discover some feasible means of mechanical

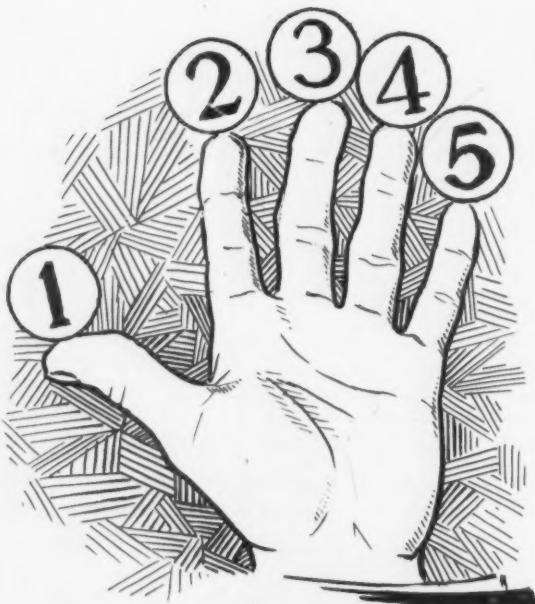
transportation. Recognizing that the old forms of tramway had no place in such service we were fortunate in happening upon the Lawson Tramway which at once appealed to us as possessing the exact features required. During this investigation our Mr. Church became the Consulting Engineer of the Consolidated Tramway Company. In the course of time, however, the broadening possibilities became so evident that it carried the future development of the business to a point further than that company was organized to follow. We therefore made a proposition to take over the entire business, plant and equipment, which proposition was accepted and is now in force. Having secured control of the business we set about redesigning the entire construction on improved lines for a more extended service than had been contemplated. This redesigning has covered practically every detail of the tramway as well as introducing many new features looking into its broader application.

In presenting the Lawson Tramway, therefore, we have the great advantage of being thoroughly conversant with the requirements from the user's standpoint. To this we add the advantage of a complete engineering and construction organization which permits us to take contracts for tramways delivered and erected—a point hitherto carefully avoided.

Take note of the fact that we were not obliged to go into the tramway business. We were not already in it—had no investment to protect. We came into it from the outside—not the inside. Our spirit was critical—far more critical than that of the non-professional purchaser. We took over the Lawson Tramway, therefore, because we saw in it the fundamentals of a complete reorganization and expansion of the Short-Haul scheme and foresaw the founding thereon of a great business. We are not disappointed.

Very respectfully,

**AMBURSEN COMPANY, Tramway Department, 61 Broadway, NEW YORK**



## FIVE REASONS WHY LEHIGH ANSWERS YOUR CEMENT PROBLEMS

### Quality

Constant care in every stage of its manufacture insures the uniformity of color, strength and fineness which are required for Lehigh Quality.

### Quantity

The battery of twelve mills, stretching from sea to sea, enable us to take care of all demands, no matter what the quantity.

### Shipping Facilities

Direct connections with the main trunk lines of the country afford you the promptest delivery on your order.

### Advertising

Nation-wide advertising campaigns create a demand for Lehigh, of which you will reap the benefit.

### Co-operation

Individual co-operation with you to aid in solving your local problems is not the least of our services.

But the proof of the pudding is in the eating. Let us demonstrate by actual service that the cement you need is



**Lehigh Portland Cement Company**  
ALLEGHENY CHICAGO SPOKANE

SYKES EXPANDED CUP  
SELF FURRING  
METAL LATH  
SAVES 3 TO 5¢ A SQ. YD.

## Metal Lath is the Building Material of Today

It gives protection, better service, longer service and it saves the owner money.

SYKES EXPANDED CUP LATH  
*Self-Furring*

saves 3 to 5 cts. a sq. yd. because it is so crimped that it provides a perfect key for mortar. No furring strips are required. Sykes Expanded Cup Metal Lath becomes firmly imbedded in stucco or plaster.

### Best for Interior Work Best for Exterior Work

Sykes Expanded Cup Lath is **heavier, stronger and better** than others when cut from the same gauge of metal, for the reason that it is cut with a wider strand. Don't judge metal lath by gauge alone, but by gauge and **weight**.

Indorsed by architects.  
Approved by U. S. Government for Post Office work.

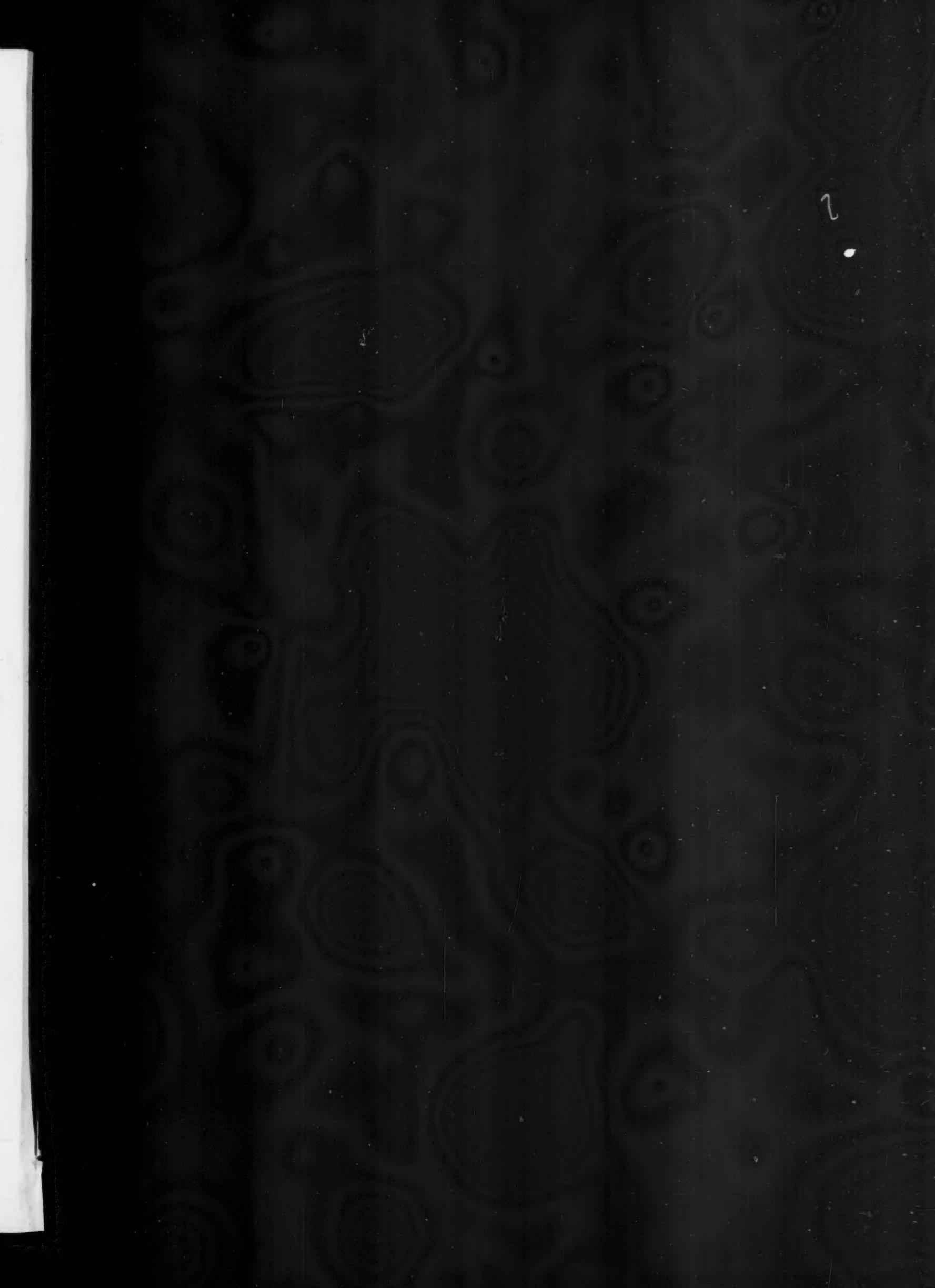
Write us today for Free Book, which gives complete specifications for Stucco Work on Metal Lath and for FREE Sample. This book will save you money.



## Sykes Metal Lath & Roofing Company

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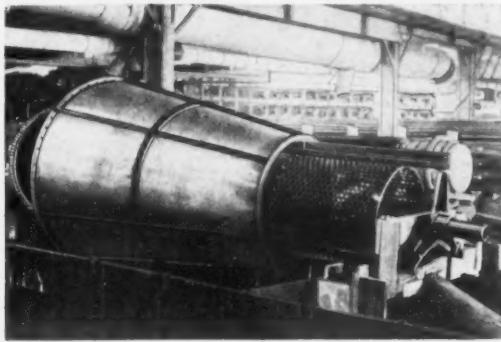




# SAND AND GRAVEL WASHING

## The CYL-CONE Screen Method of Efficiency and Economy

Saves in Construction Costs, in Power for Elevating Water and Materials, and in Maintenance Expense for the Equipment



A Webster "Cyl-Cone" Screen loaded for shipment at the factory, and the plant in which it now is working—the Milwaukee Northern Sand & Gravel Co.



# GROUND STORAGE FOR GRAVEL AND STONE



Webster Tripper on Storage Conveyor Trestle

Make your plant operation independent of varying demands—day to day, season to season, or for different sizes of product. An out-conveyor overhead and a reclaiming conveyor below ground are the usual elements of such a system. State to us your situation and let us suggest.



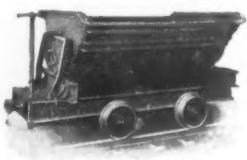
Storage Conveyor, Tripper and Stock Piles

**CHICAGO THE WEBSTER M'F'G COMPANY, TIFFIN, O. NEW YORK**  
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(100)



No. 217-H Rocker Side Dump Car  
Also made in end dump. Above car made for loading with steam shovel.

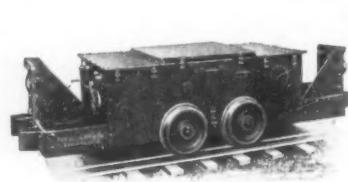


No. 805  
Dumping Stone Carrier.

## Reduce Your Handling Costs BY USING ATLAS CARS AND LOCOMOTIVES

Where a trolley wire or third rail is undesirable investigate our storage battery locomotives. Made in several styles and sizes. Cars to suit every requirement.

### THE ATLAS CAR & MFG. CO. 909 Marquette Road Cleveland, Ohio



No. 5750—Storage Battery Locomotive made in several sizes.



No. 274  
End Dump Quarry Car.

**CLEAN**  
Sharp sand and Atlas Portland Cement are both used by the contractor who does quality concrete work.

Make no mistake—insist on both.



"Concrete for Permanence"

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

## CANADA PEBBLES

Carefully selected as to size.

Best shapes.

Will not break or flake in Tube Mill.

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*Highest Grade Grinding Pebbles for Tube Mills*

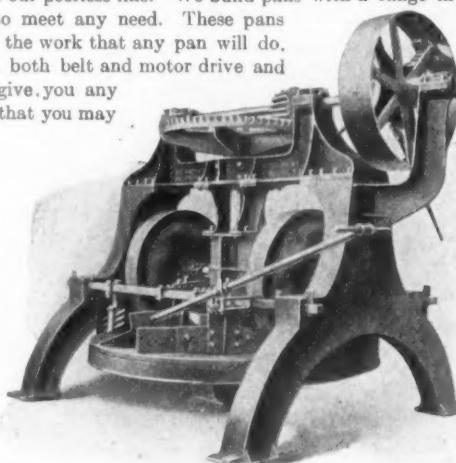
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**PORT ARTHUR** ONTARIO CANADA

## YOUR PAN NEEDS

THIS pan is the identical pan required for your plant and it should speak to you convincingly of our pan quality. It has put many Sand-Lime Brick Plants on a paying basis and will make money for you. There is no line of pans made which will compare with the "Built Right, Run Right" line and your needs can be fully taken care of from our peerless line. We build pans with a range in size and capacity to meet any need. These pans are adapted for all the work that any pan will do. We have them in both belt and motor drive and will be pleased to give you any points on our pans that you may inquire about. A poor pan is an expensive proposition. Its inefficiency shows in the quality of your product and the size of your repair bills. It also limits your capacity by handicapping the rest of the equipment. Real economy would suggest that your pans be the best possible. We will be pleased to talk pans or any other equipment with you.

*We Build Complete Equipments for Sand-Lime and Clay Brick Plants*

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